

**CHANGE**

**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

7110.65M CHG 1

4/10/00

**SUBJ: AIR TRAFFIC CONTROL**

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- 1. PURPOSE.** This change transmits revised pages to Order 7110.65M, Air Traffic Control, and a Briefing Guide.
- 2. DISTRIBUTION.** This change is distributed to select offices in Washington headquarters, regional offices, the FAA Technical Center, the FAA Aeronautical Center, all air traffic field facilities, international aviation field offices, and interested aviation public.
- 3. EFFECTIVE DATE.** August 10, 2000.
- 4. EXPLANATION OF CHANGES.** See the Explanation of Changes attachment which has editorial corrections and changes submitted through normal procedures. The Briefing Guide lists only new or modified material, along with background and operational impact statements.
- 5. DISPOSITION OF TRANSMITTAL.** Retain this transmittal until superseded by a new basic order.
- 6. PAGE CONTROL CHART.** See the Page Control Chart attachment.

~ SIGNED ~

Ronald E. Morgan  
Director of Air Traffic

Date: 4/10/00

**PAGE CONTROL CHART****7110.65M CHG 1****AUGUST 10, 2000**

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## **Air Traffic Control Explanation of Changes**

**Direct questions through appropriate facility/region staff  
to the Office of Primary Interest (OPI)**

**a. 1-1-9. CONSTRAINTS GOVERNING  
SUPPLEMENTS AND PROCEDURAL DEVIATIONS**

Changes address for U.S. Navy military operations interface office. (ATP-120)

**b. 2-3-7. AIRCRAFT EQUIPMENT SUFFIX  
TBL 2-3-3 AIRCRAFT EQUIPMENT SUFFIXES**

Amends TBL 2-3-3 to add the equipment suffix /Q indicating that an aircraft is both /R and /W qualified. (ATP-130)

**c. 3-9-4. TAKEOFF POSITION HOLD**  
Changes paragraph title to: **TAXI INTO POSITION AND HOLD (TIPH)**. Also, these changes clarify existing procedures. (ATP-120)

**d. 3-10-6. ANTICIPATING SEPARATION**  
These changes clarify existing procedures. (ATP-120)

**e. 4-5-1. VERTICAL SEPARATION MINIMA**  
Adds verbiage to specify the application of RVSM within RVSM transition areas in the Anchorage FIR. (ATP-130)

**f. 4-5-2. FLIGHT DIRECTION**  
Amends TBL 4-5-1 to allow the assignment of any cardinal altitude within RVSM or RVSM transition airspace. (ATP-130)

**g. 8-4-1. APPLICATION**  
Implements Notice N7110.188. (ATP-130)

**h. 8-8-3. LONGITUDINAL SEPARATION**  
Implements Notice N7110.193. (ATP-120)

**i. 8-9-9. PROCEDURES FOR WEATHER  
DEVIATIONS AND OTHER CONTINGENCIES IN  
OCEANIC CONTROLLED AIRSPACE**

Amends verbiage in paragraph 8-9-9b, to allow for suggestion of a climb or descent of 500 feet to a contingency altitude in areas where RVSM or composite separation is utilized. Also adds verbiage to subpara 8-9-9b, which specifies that the controller is not responsible for providing separation in the event that a revised ATC clearance is unavailable and the prescribed weather deviation procedure is used. To avoid the possible interpretation that a clearance is being issued when one is unavailable, the phrase "deviate at pilot's discretion" is being removed from the suggested phraseology in subpara 8-9-9c. (ATP-130)

**j.** Changes were made updating references to other orders to reflect changes in paragraph numbers/titles. Revision bars were used. (ATA-10)

**k.** Editorial/format changes were made where necessary. Revision bars were not used due to the insignificant nature of the changes. (ATA-10)

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# Chapter 1. Introduction

## Section 1. General

### 1-1-1. PURPOSE

This order prescribes air traffic control procedures and phraseology for use by persons providing air traffic control services. Controllers are required to be familiar with the provisions of this order that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations that are not covered by it.

### 1-1-2. DISTRIBUTION

This order is distributed to selected offices in Washington Headquarters, Regional Offices, the Technical Center, and the Aeronautical Center. Also, copies are sent to all air traffic control facilities, all international aviation field offices, and the interested aviation public.

### 1-1-3. CANCELLATION

FAA Order 7110.65L, Air Traffic Control, dated February 26, 1998, and all changes to it are canceled.

### 1-1-4. EXPLANATION OF MAJOR CHANGES

The significant changes to this order are identified in the Explanation of Changes page(s). It is advisable to retain the page(s) throughout the duration of the basic order. If further information is desired, direct questions through the appropriate facility/region staff to the office shown in parentheses following the change.

### 1-1-5. EFFECTIVE DATE

This order is effective **February 24, 2000**.

### 1-1-6. RECOMMENDATIONS FOR PROCEDURAL CHANGES

a. Personnel should submit recommended changes in procedures to facility management.

b. Recommendations from other sources should be submitted through appropriate FAA, military, or industry/user channels to Headquarters, FAA, Director of Air Traffic, AAT-1, attention: ATP-100.

### 1-1-7. PUBLICATION AND DELIVERY DATES

a. This order and its changes are scheduled to be published according to TBL 1-1-1.

**Publications Timetable**

<i>Basic or Change</i>	<i>Cutoff Date for Submission</i>	<i>Effective Date of Publication</i>
7110.65M Basic	7/15/99	2/24/00
Change 1	2/24/00	8/10/00
Change 2	8/10/00	1/25/01
Change 3	1/25/01	7/12/01
7110.65N Basic	7/12/01	2/21/02

*TBL 1-1-1*

b. If an FAA facility **has not** received the order/changes at least **30 days** before the above effective dates, the facility shall notify its regional distribution officer.

c. If a military facility **has not** received the order/changes at least **30 days** before the above effective dates, the facility shall notify its appropriate military headquarters. (See TBL 1-1-2.)

**Military Distribution Contacts**

<i>Military Headquarters</i>	<i>DSN</i>	<i>Commercial</i>
U.S. Army, USAASA	656-4868	(703) 806-4868
U.S. Air Force		Contact Local *NIMA Customer Account Representative
U.S. Navy, CNO (N885F)	224-2710	(703) 614-2710

\*NIMA-National Imagery and Mapping Agency

*TBL 1-1-2*

### 1-1-8. PROCEDURAL LETTERS OF AGREEMENT

Procedures/minima which are applied jointly or otherwise require the cooperation or concurrence of more than one facility/organization must be documented in a letter of agreement. Letters of agreement only supplement this order. Any minima they specify must not be less than that specified herein unless appropriate military authority has authorized application of reduced separation between military aircraft.

#### REFERENCE-

FAAO 7110.65, ATC Service, Para 2-1-1.

FAAO 7210.3, Letters of Agreement, Para 4-3-1.

### 1-1-9. CONSTRAINTS GOVERNING SUPPLEMENTS AND PROCEDURAL DEVIATIONS

a. Exceptional or unusual requirements may dictate procedural deviations or supplementary procedures to this order. Prior to implementing supplemental or any procedural deviation that alters the level, quality, or degree of service, obtain prior approval from the Director of Air Traffic, AAT-1.

b. If military operations or facilities are involved, prior approval by the following appropriate headquarters is required for subsequent interface with FAA. (See TBL 1-1-3.)

#### Military Operations Interface Offices

Branch	Address
U.S. Navy	CNO Office of the Chief of Naval Operations (N885F) 2000 The Pentagon Washington, D.C. 20350-2000
U.S. Air Force	HQ AFFSA/XA 1535 Command Drive, Suite D302, Andrews AFB, MD 20762-7002
U.S. Army	Director USAASA (MOAS-AS) 9325 Gunston Road, Suite N319 Ft. Belvoir, VA 22060-5582

TBL 1-1-3

#### NOTE-

*Terminal: Headquarters USAF has delegated to major Air Commands authority to authorize base commanders to reduce same runway separation standards for military aircraft. These are specified and approved by affected ATC and user units. When applied, appropriate advisories may be required; e.g., "(A/C call sign) continue straight ahead on right side; F-16 landing behind on left." "(A/C call sign) hold position on right side; F-5 behind on left."*

#### REFERENCE-

FAAO 7110.65, Use of Active Runways, Para 3-1-3.

### 2-3-5. AIRCRAFT TYPE

Use the approved codes listed in Appendices A thru C to indicate aircraft type.

### 2-3-6. USAF/USN UNDERGRADUATE PILOTS

To identify aircraft piloted by solo USAF/USN undergraduate student pilots (who may occasionally request revised clearances because they normally are restricted to flight in VFR conditions), the aircraft identification in the flight plan shall include the letter "Z" as a suffix. Do not use this suffix, however, in ground-to-air communication.

#### NOTE-

*USAF solo students who have passed an instrument certification check may penetrate cloud layers in climb or descent only. Requests for revised clearances to avoid clouds in level flight can still be expected. This does not change the requirement to use the letter "Z" as a suffix to the aircraft identification.*

#### REFERENCE-

FAAO 7110.65, Aircraft Identification, Para 2-4-20.  
FAAO 7610.4, Chapter 12, Section 10, USAF Undergraduate Flying Training (UFT)/Pilot Instructor Training (PIT).

### 2-3-7. AIRCRAFT EQUIPMENT SUFFIX

a. Indicate, for both VFR and IFR operations, the aircraft's radar transponder, DME, or navigation capability by adding the appropriate symbol, preceded by a slant. (See TBL 2-3-3.)

b. When forwarding this information, state the aircraft type followed by the word "slant" and the appropriate phonetic letter equivalent of the suffix.

#### EXAMPLE-

*"Cessna Three-ten slant Tango."  
"A-Ten slant November."  
"F-Sixteen slant Papa."  
"Seven-sixty-seven slant Golf."*

### 2-3-8. CLEARANCE STATUS

Use an appropriate clearance symbol followed by a dash (-) and other pertinent information to clearly show the clearance status of an aircraft. To indicate delay status use:

a. The symbol "H" at the clearance limit when holding instructions have been included in the aircraft's original clearance. Show detailed holding information following the dash when holding differs from the established pattern for the fix; i.e., turns, leg lengths, etc.

b. The symbols "F" or "O" to indicate the clearance limit when a delay is not anticipated.

### 2-3-9. CONTROL SYMBOLOGY

Use authorized control and clearance symbols or abbreviations for recording clearances, reports, and instructions. Control status of aircraft must always be current. You may use:

a. Plain language markings when it will aid in understanding information.

b. Locally approved identifiers. Use these only within your facility and not on teletypewriter or interphone circuits.

c. Plain sheets of paper or locally prepared forms to record information when flight progress strips are not used. (See TBL 2-3-4 and TBL 2-3-5.)

d. Control Information Symbols  
(See FIG 2-3-6 and FIG 2-3-7.)

#### REFERENCE-

FAAO 7110.65, Exceptions, Para 4-5-3.



## Aircraft Equipment Suffixes

SUFFIX	AIRCRAFT EQUIPMENT SUFFIXES
	<b>NO DME</b>
/X	No transponder
/T	Transponder with no Mode C
/U	Transponder with Mode C
	<b>DME</b>
/D	No transponder
/B	Transponder with no Mode C
/A	Transponder with Mode C
	<b>TACAN ONLY</b>
/M	No transponder
/N	Transponder with no Mode C
/P	Transponder with Mode C
	<b>AREA NAVIGATION (RNAV)</b>
/Y	LORAN, VOR/DME, or INS with no transponder
/C	LORAN, VOR/DME, or INS, transponder with no Mode C
/I	LORAN, VOR/DME, or INS, transponder with Mode C
	<b>ADVANCED RNAV WITH TRANSPONDER AND MODE C</b> (If an aircraft is unable to operate with a transponder and/or Mode C, it will revert to the appropriate code listed above under Area Navigation.)
/E	Flight Management System (FMS) with en route, terminal, and approach capability. Equipment requirements are: (a) Dual FMS which meets the specifications of AC 25-15, Approval of Flight Management Systems in Transport Category Airplanes; AC 20-129, Airworthiness Approval of Vertical Navigation (VNAV) Systems for use in the U.S. NAS and Alaska; AC 20-130A, Airworthiness Approval of Navigation or Flight Management Systems Integrating Multiple Navigation Sensors; or equivalent criteria as approved by Flight Standards. (b) A flight director and autopilot control system capable of following the lateral and vertical FMS flight path. (c) At least dual inertial reference units (IRU's). (d) A database containing the waypoints and speed/altitude constraints for the route and/or procedure to be flown that is automatically loaded into the FMS flight plan. (e) An electronic map. (U.S. and U.S. territories only unless otherwise authorized.)
/F	A single FMS with en route, terminal, and approach capability that meets the equipment requirements of /E, (a) through (d), above. (U.S. and U.S. territories only unless otherwise authorized.)
/G	Global Positioning System (GPS)/Global Navigation Satellite System (GNSS) equipped aircraft with en route and terminal capability
/R	Required Navigational Performance (Denotes capability to operate in RNP designated airspace and routes)
/W	Reduced Vertical Separation Minima (RVSM)
/Q	Required Navigation Performance (RNP) and Reduced Vertical Separation Minima (RVSM) (Indicate approval for application of RNP and RVSM separation standards.) It should be noted that /Q is for automation purposes only and will not be filed by system users. FAA processors will convert the combination of /R+/W to =/Q.

TBL 2-3-3

## Section 7. Altimeter Settings

### 2-7-1. CURRENT SETTINGS

a. Current altimeter settings shall be obtained from direct-reading instruments or directly from weather reporting stations.

#### REFERENCE-

FAAO 7210.3, Chapter 2, Section 10, Wind/Altimeter Information.

b. If a pilot requests the altimeter setting in millibars, ask the nearest weather reporting station for the equivalent millibar setting.

c. USAF/USA. Use the term "Estimated Altimeter" for altimeter settings reported or received as estimated.

#### REFERENCE-

FAAO 7110.65, Departure Information, Para 3-9-1.

FAAO 7110.65, Landing Information, Para 3-10-1.

FAAO 7110.65, Approach Information, Para 4-7-10.

### 2-7-2. ALTIMETER SETTING ISSUANCE BELOW LOWEST USABLE FL

a. **TERMINAL.** Identify the source of an altimeter setting when issued for a location other than the aircraft's departure or destination airport.

b. **EN ROUTE.** Identify the source of all altimeter settings when issued.

#### PHRASEOLOGY-

**THE** (facility name) (time of report if more than one hour old) **ALTIMETER** (setting).

c. Issue the altimeter setting:

1. To en route aircraft at least one time while operating in your area of jurisdiction. Issue the setting for the nearest reporting station along the aircraft's route of flight:

#### NOTE-

14 CFR Section 91.121(1) requires that the pilot set his/her altimeter to the setting of a station along his/her route of flight within 100 miles of the aircraft if one is available. However, issuance of the setting of an adjacent station during periods that a steep gradient exists will serve to inform the pilot of the difference between the setting he/she is using and the pressure in the local area and better enable him/her to choose a more advantageous setting within the limitations of 14 CFR Section 91.121.

2. **TERMINAL.** To all departures. Unless specifically requested by the pilot, the altimeter setting need not be issued to local aircraft operators who have requested this omission in writing or to scheduled air carriers.

#### REFERENCE-

FAAO 7110.65, Departure Information, Para 3-9-1.

3. **TERMINAL.** To arriving aircraft on initial contact or as soon as possible thereafter. The tower may omit the altimeter if the aircraft is sequenced or vectored to the airport by the approach control having jurisdiction at that facility.

#### REFERENCE-

FAAO 7110.65, Approach Information, Para 4-7-10.

FAAO 7110.65, Approach Information, Para 5-10-2.

4. **EN ROUTE.** For the destination airport to arriving aircraft, approximately 50 miles from the destination, if an approach control facility does not serve the airport.

5. In addition to the altimeter setting provided on initial contact, issue changes in altimeter setting to aircraft executing a nonprecision instrument approach as frequently as practical when the official weather report includes the remarks "pressure falling rapidly."

d. If the altimeter setting must be obtained by the pilot of an arriving aircraft from another source, instruct the pilot to obtain the altimeter setting from that source.

#### NOTE-

1. The destination altimeter setting, whether from a local or remote source, is the setting upon which the instrument approach is predicated.

2. Approach charts for many locations specify the source of altimeter settings as non-FAA facilities, such as UNICOM's.

e. When issuing clearance to descend below the lowest usable flight level, advise the pilot of the altimeter setting of the weather reporting station nearest the point the aircraft will descend below that flight level.

f. Department of Defense (DOD) aircraft which operate on "single altimeter settings" (CFR Exemption 2861A) shall be issued altimeter settings in accordance with standard procedures while the aircraft are en route to and from their restricted areas, MOA's, and ATC assigned airspace areas.

g. When the barometric pressure is greater than 31.00 inches Hg., issue the altimeter setting and:

1. En Route/Arrivals. Advise pilots to remain set on altimeter 31.00 until reaching final approach segment.

2. Departures. Advise pilots to set altimeter 31.00 prior to reaching any mandatory/crossing altitude or 1,500 feet AGL, whichever is lower.

**PHRASEOLOGY-**

**ALTIMETER, THREE ONE TWO FIVE, SET THREE ONE ZERO ZERO UNTIL REACHING THE FINAL APPROACH FIX.**

*or*

**ALTIMETER, THREE ONE ONE ZERO, SET THREE ONE ZERO ZERO PRIOR TO REACHING ONE THOUSAND THREE HUNDRED.**

**NOTE-**

1. Aircraft with Mode C altitude reporting will be displayed on the controller's radar scope with a uniform altitude offset above the assigned altitude. With an actual altimeter of 31.28 inches Hg, the Mode C equipped aircraft will show 3,300 feet when assigned 3,000 feet. This will occur unless local directives authorize entering the altimeter setting 31.00 into the computer system regardless of the actual barometric pressure.

2. Flight Standards will implement high barometric pressure procedures by NOTAM defining the geographic area affected.

3. Airports unable to accurately measure barometric pressures above 31.00 inches Hg. will report the barometric pressure as "missing" or "in excess of 31.00 inches of Hg." Flight operations to or from those airports are restricted to VFR weather conditions.

**REFERENCE-**

AIM, Procedures, Para 7-2-2.

FAAO 7110.65, Landing Information, Para 3-10-1.

## Section 9. Departure Procedures and Separation

### 3-9-1. DEPARTURE INFORMATION

Provide current departure information, as appropriate, to departing aircraft.

a. Departure information contained in the ATIS broadcast may be omitted if the pilot states the appropriate ATIS code.

b. Issue departure information by including the following:

1. Runway in use. (May be omitted if pilot states "have the numbers.")

2. Surface wind from direct readout dial, LLWAS, or automated weather observing system information display. (May be omitted if pilot states "have the numbers.")

3. Altimeter setting. (May be omitted if pilot states "have the numbers.")

#### REFERENCE-

FAAO 7110.65, *Current Settings*, Para 2-7-1.

c. Time, when requested.

d. Issue the official ceiling and visibility, when available, to a departing aircraft before takeoff as follows:

1. To a VFR aircraft when weather is below VFR conditions.

2. To an IFR aircraft when weather is below VFR conditions or highest takeoff minima, whichever is greater.

#### NOTE-

Standard takeoff minimums are published in 14 CFR Section 91.175(f). Takeoff minima other than standard are prescribed for specific airports/runways and published in a tabular form supplement to the NOS Instrument Approach Procedures Charts and appropriate FAA Forms 8260.

e. Taxi information, as necessary. You need not issue taxi route information unless the pilot specifically requests it.

f. **USAF NOT APPLICABLE.** An advisory to "check density altitude" when appropriate.

#### REFERENCE-

FAAO 7210.3, *Broadcast Density Altitude Advisory*, Para 2-10-6.

g. Issue braking action for the runway in use as received from pilots or the airport management when Braking Action Advisories are in effect.

#### REFERENCE-

FAAO 7110.65, *Altimeter Setting Issuance Below Lowest Usable FL*, Para 2-7-2.

FAAO 7110.65, *Low Level Wind Shear Advisories*, Para 3-1-8.

FAAO 7110.65, *Braking Action Advisories*, Para 3-3-5.

P/CG Term- *Braking Action Advisories*.

### 3-9-2. DEPARTURE DELAY INFORMATION

USA/USAF/USN NOT APPLICABLE

When gate-hold procedures are in effect, issue the following departure delay information as appropriate:

#### REFERENCE-

FAAO 7210.3, *Gate Hold Procedures*, Para 10-4-3.

a. Advise departing aircraft the time at which the pilot can expect to receive engine startup advisory.

#### PHRASEOLOGY-

**GATE HOLD PROCEDURES ARE IN EFFECT. ALL AIRCRAFT CONTACT (position) ON (frequency) FOR ENGINE START TIME. EXPECT ENGINE START/TAXI (time).**

b. Advise departing aircraft when to start engines and/or to advise when ready to taxi.

#### PHRASEOLOGY-

**START ENGINES, ADVISE WHEN READY TO TAXI,**

or

**ADVISE WHEN READY TO TAXI.**

c. If the pilot requests to hold in a delay absorbing area, the request shall be approved if space and traffic conditions permit.

d. Advise all aircraft on GC/FD frequency upon termination of gate hold procedures.

#### PHRASEOLOGY-

**GATE HOLD PROCEDURES NO LONGER IN EFFECT.**

### 3-9-3. DEPARTURE CONTROL INSTRUCTIONS

Inform departing IFR, SVFR, VFR aircraft receiving radar service, and TRSA VFR aircraft of the following:

a. Before takeoff.

1. Issue the appropriate departure control frequency and beacon code. The departure control frequency may be omitted if a DP has been or will be assigned and the departure control frequency is published on the DP.

#### PHRASEOLOGY-

**DEPARTURE FREQUENCY WILL BE (frequency), SQUAWK (code).**

2. Inform all departing IFR military turboprop/turbojet aircraft (except transport and cargo types) to change to departure control frequency. If the local controller has departure frequency override, transmit urgent instructions on this frequency. If the override capability does not exist, transmit urgent instructions on the emergency frequency.

**PHRASEOLOGY-**  
**CHANGE TO DEPARTURE.**

3. **USAF.** USAF control towers are authorized to inform all departing IFR military transport/cargo type aircraft operating in formation flight to change to departure control frequency before takeoff.

**b. After takeoff.**

1. When the aircraft is about  $\frac{1}{2}$  mile beyond the runway end, instruct civil aircraft, and military transport, and cargo types to contact departure control, provided further communication with you is not required.

2. Do not request departing military turboprop/turbojet aircraft (except transport and cargo types) to make radio frequency or radar beacon changes before the aircraft reaches 2,500 feet above the surface.

**REFERENCE-**  
FAAO 7110.65, *Visual Separation, Para 7-2-1.*

**3-9-4. TAXI INTO POSITION AND HOLD (TIPH)**

**a.** The intent of TIPH is to position aircraft for an imminent departure. Authorize an aircraft to taxi into position and hold, except as restricted in subpara e, when takeoff clearance cannot be issued because of traffic. Issue traffic information to any aircraft so authorized. Traffic information may be omitted when the traffic is another aircraft which has landed on or is taking off the same runway and is clearly visible to the holding aircraft. Do not use conditional phrases such as "behind landing traffic" or "after the departing aircraft."

**b. USN NOT APPLICABLE.** First state the runway number followed by the taxi into position clearance when more than one runway is active.

**PHRASEOLOGY-**

**RUNWAY (number), TAXI INTO POSITION AND HOLD.**

*Or, when only one runway is active:*

**TAXI INTO POSITION AND HOLD.**

**c.** When an aircraft is authorized to taxi into takeoff position to hold, inform it of the closest traffic that is cleared to land, touch-and-go, stop-and-go, or unrestricted low approach on the same runway.

**EXAMPLE-**

*"United Five, runway one eight, taxi into position and hold. Traffic a Boeing Seven Thirty Seven, six mile final."*

*Or, when only one runway is active:*

*"United Five, taxi into position and hold. Traffic a Boeing Seven Thirty Seven, six mile final."*

**d. USAF.** When an aircraft is authorized to taxi into takeoff position to hold, inform it of the closest traffic within 6 miles on final approach to the same runway. If the approaching aircraft is on a different frequency, inform it of the aircraft taxiing into position.

**e.** Do not authorize an aircraft to taxi into position and hold at an intersection between sunset and sunrise or at anytime when the intersection is not visible from the tower.

**f. USN.** Do not authorize aircraft to taxi into takeoff position to hold simultaneously on intersecting runways.

**PHRASEOLOGY-**  
**CONTINUE HOLDING,**

*or*

**TAXI OFF THE RUNWAY.**

**REFERENCE-**  
FAAO 7110.65, *Altitude Restricted Low Approach, Para 3-10-10.*

**g.** When a local controller delivers or amends an ATC clearance to an aircraft awaiting departure and that aircraft is holding short of a runway or is holding in position on a runway, an additional clearance shall be issued to prevent the possibility of the aircraft inadvertently taxiing onto the runway and/or beginning takeoff roll. In such cases, append one of the following ATC instructions as appropriate:

**1. HOLD SHORT OF RUNWAY, or**

## 2. HOLD IN POSITION.

**h. USAF/USN.** When issuing additional instructions or information to an aircraft holding in takeoff position, include instructions to continue holding or taxi off the runway, unless it is cleared for takeoff.

**PHRASEOLOGY-**  
**CONTINUE HOLDING,**

or

**TAXI OFF THE RUNWAY.**

**REFERENCE-**  
FAAO 7110.65, *Altitude Restricted Low Approach, Para 3-10-10.*

### 3-9-5. ANTICIPATING SEPARATION

Takeoff clearance needs not be withheld until prescribed separation exists if there is a reasonable assurance it will exist when the aircraft starts takeoff roll.

### 3-9-6. SAME RUNWAY SEPARATION

Separate a departing aircraft from a preceding departing or arriving aircraft using the same runway by ensuring that it does not begin takeoff roll until:

**a.** The other aircraft has departed and crossed the runway end or turned to avert any conflict. If you can determine distances by reference to suitable landmarks, the other aircraft needs only be airborne if the following minimum distance exists between aircraft:  
(See FIG 3-9-1 and FIG 3-9-2.)

1. When only Category I aircraft are involved- 3,000 feet.
2. When a Category I aircraft is preceded by a Category II aircraft- 3,000 feet.
3. When either the succeeding or both are Category II aircraft- 4,500 feet.
4. When either is a Category III aircraft- 6,000 feet.
5. When the succeeding aircraft is a helicopter, visual separation may be applied in lieu of using distance minima.

**Same Runway Separation**  
**[View 1]**

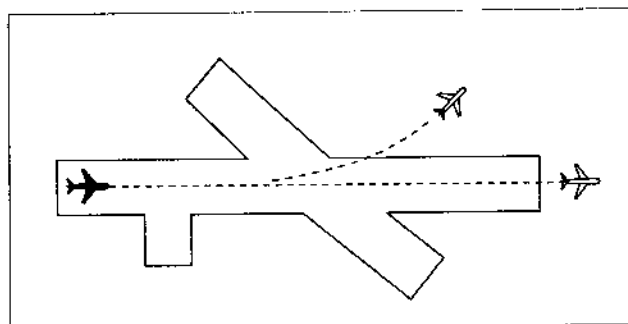


FIG 3-9-1

**Same Runway Separation**  
**[View 2]**

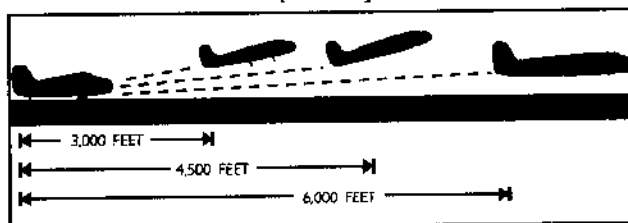


FIG 3-9-2

**NOTE-**

Aircraft same runway separation (SRS) categories are specified in Appendices A, B, and C and based upon the following definitions:

**CATEGORY I-** small aircraft weighing 12,500 lbs. or less, with a single propeller driven engine, and all helicopters.

**CATEGORY II-** small aircraft weighing 12,500 lbs. or less, with propeller driven twin-engines.

**CATEGORY III-** all other aircraft.

**b.** A preceding landing aircraft is clear of the runway.  
(See FIG 3-9-3.)

**Preceding Landing Aircraft Clear of Runway**

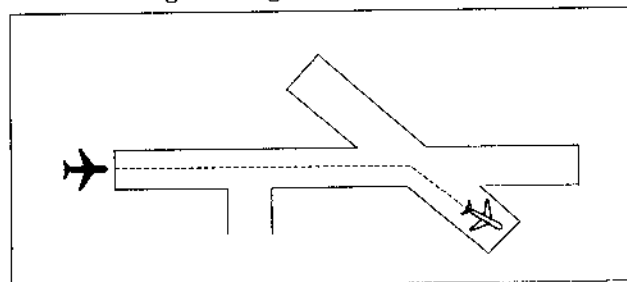


FIG 3-9-3

**REFERENCE-**  
*PICG Term- Clear of the Runway.*

## WAKE TURBULENCE APPLICATION

c. Do not issue clearances which imply or indicate approval of rolling takeoffs by heavy jet aircraft except as provided in para 3-1-14, Ground Operations When Volcanic Ash is Present.

d. Do not issue clearances to a small aircraft to taxi into position and hold on the same runway behind a departing heavy jet aircraft to apply the necessary intervals.

### REFERENCE-

AC 90-23, Aircraft Wake Turbulence.

e. The minima in para 5-5-3, Minima, may be applied in lieu of the 2 minute requirement in subpara f. When para 5-5-3, Minima, are applied, ensure that the appropriate radar separation exists at or prior to the time an aircraft becomes airborne when taking off behind a heavy jet/B757.

### NOTE-

The pilot may request additional separation; i.e., 2 minutes vs. 4 miles, but should make this request before taxiing on the runway.

f. Separate IFR/VFR aircraft taking off behind a heavy jet/B757 departure by 2 minutes, when departing:

### NOTE-

Takeoff clearance to the following aircraft should not be issued until 2 minutes after the heavy jet/B757 begins takeoff roll.

1. The same runway. (See FIG 3-9-4.)

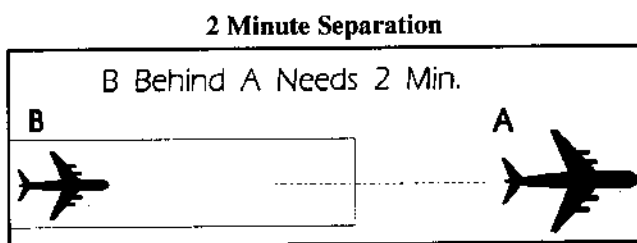


FIG 3-9-4

2. A parallel runway separated by less than 2,500 feet.

g. Separate an aircraft from a heavy jet/B757 when operating on a runway with a displaced landing threshold if projected flight paths will cross— 2 minutes when:

1. A departure follows a heavy jet/B757 arrival.
2. An arrival follows a heavy jet/B757 departure.

h. Air traffic controllers shall not approve pilot requests to deviate from the required wake turbulence time interval if the preceding aircraft is a heavy jet/B757.

i. Separate a small aircraft behind a large aircraft taking off or making a low/missed approach when utilizing opposite direction takeoffs on the same runway by 3 minutes unless a pilot has initiated a request to deviate from the 3-minute interval. In the latter case, issue a wake turbulence advisory before clearing the aircraft for takeoff.

### NOTE-

1. A request for takeoff does not initiate a waiver request.
2. To initiate a waiver of the 3 minute rule, the request for takeoff must be accompanied by a request to deviate from the 3-minute rule.

### REFERENCE-

FAAO 7110.65, Aircraft Information: Appendix A, Appendix B, and Appendix C.

j. Separate aircraft behind a heavy jet/B757 departing or making a low/missed approach when utilizing opposite direction takeoffs or landings on the same or parallel runways separated by less than 2,500 feet— 3 minutes.

k. Inform an aircraft when it is necessary to hold in order to provide the required 3-minute interval.

### PHRASEOLOGY-

**HOLD FOR WAKE TURBULENCE.**

### REFERENCE-

FAAO 7110.65, Wake Turbulence Separation for Intersection Departures, Para 3-9-7.

## 3-9-7. WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES

a. Apply the following wake turbulence criteria for intersection departures:

1. Separate a small aircraft taking off from an intersection on the same runway (same or opposite direction takeoff) behind a preceding departing large aircraft by ensuring that the small aircraft does not start takeoff roll until at least 3 minutes after the large aircraft has taken off.

2. Separate any aircraft taking off from an intersection on the same runway (same or opposite direction takeoff), parallel runways separated by less than 2,500 feet, and parallel runways separated by less than 2,500 feet with runway thresholds offset by 500 feet or more, by ensuring that the aircraft does not start takeoff roll until at least 3 minutes after a heavy aircraft/B757 has taken off.

**NOTE-**

*Parallel runways separated by less than 2,500 feet with runway thresholds offset by less than 500 feet shall apply para 3-9-6, Same Runway Separation, subpara f.*

3. Separate a small aircraft weighing 12,500 lbs. or less taking off from an intersection on the same runway (same or opposite direction takeoff) behind a preceding small aircraft weighing more than 12,500 lbs. by ensuring the following small aircraft does not start takeoff roll until at least 3 minutes after the preceding aircraft has taken off.

4. Inform an aircraft when it is necessary to hold in order to provide the required 3-minute interval.

**PHRASEOLOGY-**

**HOLD FOR WAKE TURBULENCE.**

**NOTE-**

*Aircraft conducting touch-and-go and stop-and-go operations are considered to be departing from an intersection.*

**REFERENCE-**

*FAAO 7110.65, Touch-and-Go or Stop-and-Go or Low Approach, Para 3-8-2.*

b. The 3-minute interval is not required when:

1. A pilot has initiated a request to deviate from that interval unless the preceding departing aircraft is a heavy aircraft/B757.

**NOTE-**

*A request for takeoff does not initiate a waiver request; the request for takeoff must be accomplished by a request to deviate from the 3-minute interval.*

2. USA NOT APPLICABLE. The intersection is 500 feet or less from the departure point of the preceding aircraft and both aircraft are taking off in the same direction.

3. Successive touch-and-go and stop-and-go operations are conducted with a small aircraft following another small aircraft weighing more than 12,500 lbs. or a large aircraft in the pattern, or a small aircraft weighing more than 12,500 lbs. or a large aircraft departing the same runway, provided the pilot of the small aircraft is maintaining visual separation/spacing behind the preceding large aircraft. Issue a wake turbulence cautionary advisory and the position of the large aircraft.

**EXAMPLE-**

*"Caution wake turbulence, DC-9 on base leg."*

4. Successive touch-and-go and stop-and-go operations are conducted with any aircraft following a heavy aircraft/B757 in the pattern, or heavy air-

craft/B757 departing the same runway, provided the pilot of the aircraft is maintaining visual separation/spacing behind the preceding heavy aircraft/B757. Issue a wake turbulence cautionary advisory and the position of the heavy aircraft/B757.

**EXAMPLE-**

*"Caution wake turbulence, heavy Lockheed C5A departing runway two three."*

5. If action is initiated to reduce the separation between successive touch-and-go or stop-and-go operations, apply 3 minutes separation.

c. When applying the provision of subpara b:

1. Issue a wake turbulence advisory before clearing the aircraft for takeoff.

2. Do not clear the intersection departure for an immediate takeoff.

3. Issue a clearance to permit the trailing aircraft to deviate from course enough to avoid the flight path of the preceding large departure when applying supara b1 or b2.

4. Separation requirements in accordance with para 3-9-6, Same Runway Separation, must also apply.

**REFERENCE-**

*FAAO 7110.65, Same Runway Separation, Para 3-9-6.*

**3-9-8. INTERSECTING RUNWAY SEPARATION**

Separate departing aircraft from an aircraft using an intersecting runway, or nonintersecting runways when the flight paths intersect, by ensuring that the departure does not begin takeoff roll until one of the following exists:

a. The preceding aircraft has departed and passed the intersection, has crossed the departure runway, or is turning to avert any conflict.  
(See FIG 3-9-5 and FIG 3-9-6.)

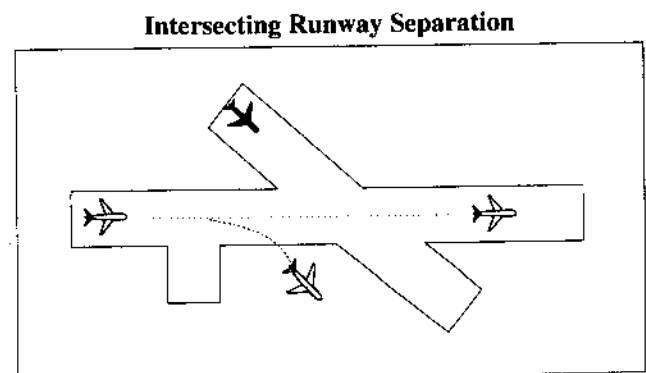


FIG 3-9-5



## Intersecting Runway Separation

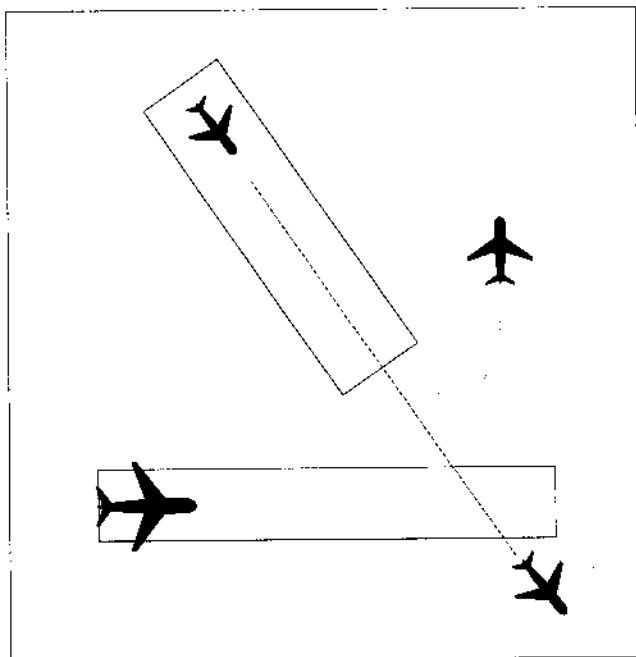


FIG 3-9-6

b. A preceding arriving aircraft is clear of the landing runway, completed the landing roll and will hold short of the intersection, passed the intersection, or has crossed over the departure runway. (See FIG 3-9-7 and FIG 3-9-8.)

**REFERENCE-**

P/CG Term- Clear of the Runway.

## Intersecting Runway Separation

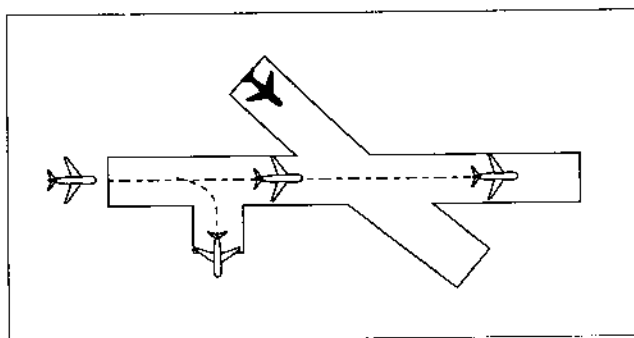


FIG 3-9-7

## Intersecting Runway Separation

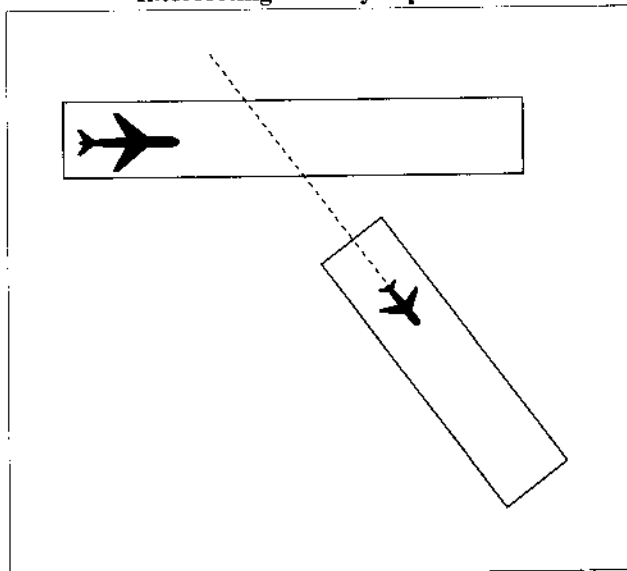


FIG 3-9-8

**WAKE TURBULENCE APPLICATION**

c. Separate IFR/VFR aircraft taking off behind a heavy jet/B757 departure by 2 minutes when departing:

**NOTE-**

Takeoff clearance to the following aircraft should not be issued until 2 minutes after the heavy jet/B757 begins takeoff roll.

1. Crossing runways if projected flight paths will cross. (See FIG 3-9-9.)
2. A parallel runway separated by 2,500 feet or more if projected flight paths will cross. (See FIG 3-9-10.)

## Crossing Runways

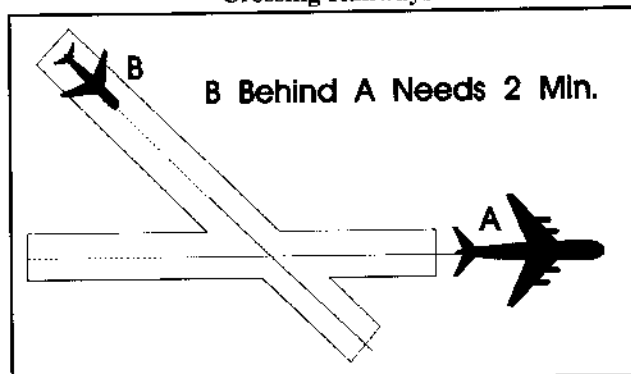


FIG 3-9-9

## WAKE TURBULENCE APPLICATION

c. Separate IFR/VFR aircraft landing behind a departing heavy jet/B757 on a crossing runway if the arrival will fly through the airborne path of the departure—2 minutes or the appropriate radar separation minima.

(See FIG 3-10-10.)

### Intersecting Runway Separation

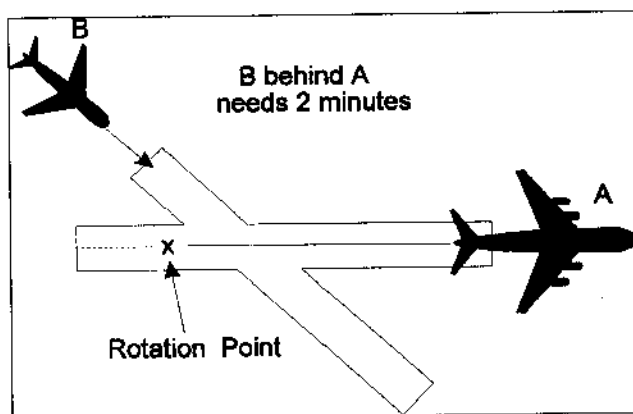


FIG 3-10-10

d. Issue wake turbulence cautionary advisories, the position, altitude if known, and direction of flight of the heavy jet/B757 to:

**REFERENCE-**  
AC 90-23, Aircraft Wake Turbulence, Pilot Responsibility, Para 12.

1. IFR/VFR aircraft landing on crossing runways behind a departing heavy jet/B757; if the arrival flight path will cross the takeoff path behind the heavy jet/B757 and behind the heavy jet/B757 rotation point. (See FIG 3-10-11.)

### Intersecting Runway Separation

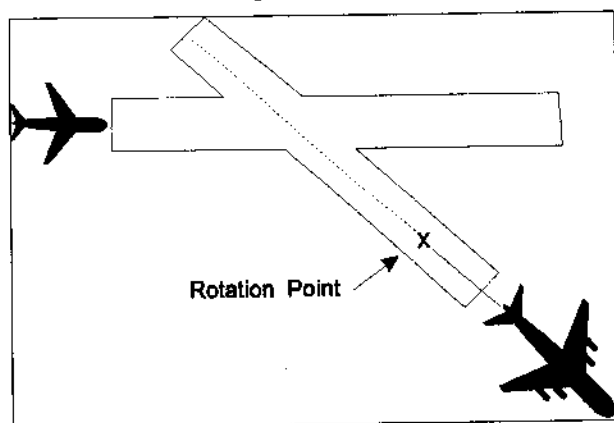


FIG 3-10-11

### EXAMPLE-

*"Runway niner cleared to land. Caution wake turbulence, heavy C-One Forty One departing runway one five."*

2. VFR aircraft landing on a crossing runway behind an arriving heavy jet/B757 if the arrival flight path will cross. (See FIG 3-10-12.)

### Intersecting Runway Separation

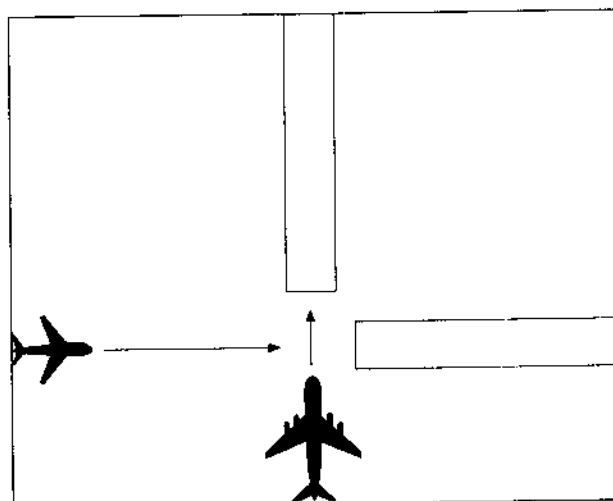


FIG 3-10-12

### EXAMPLE-

*"Runway niner cleared to land. Caution wake turbulence, Boeing Seven Fifty Seven landing runway three six."*

**REFERENCE-**  
FAAO 7110.65, Approaches to Multiple Runways, Para 7-4-4.

## 3-10-5. LANDING CLEARANCE

a. Issue landing clearance. Restate the landing runway whenever more than one runway is active, or an instrument approach is being conducted to a closed runway.

**PHRASEOLOGY-**  
**CLEARED TO LAND,**

or

**RUNWAY (designator) CLEARED TO LAND.**

b. "USN NOT APPLICABLE." Inform the closest aircraft that is cleared to land, touch-and-go, stop-and-go, or unrestricted low approaches when there is traffic holding on the same runway.

### EXAMPLE-

*"Delta One, cleared to land. Traffic holding in position."*

or

*"Delta One, runway one eight, cleared to land. Traffic holding in position."*

c. **USA/USAF/USN.** Issue surface wind when clearing an aircraft to land, touch-and-go, stop-and-go, low approach, or the option. Restate the landing runway whenever there is a possibility of a conflict with another aircraft which is using or is planning to use another runway.

**PHRASEOLOGY-**

*WIND (surface wind direction and velocity), CLEARED TO LAND,*

*or*

*WIND (surface wind direction and velocity), RUNWAY (designator) CLEARED TO LAND.*

**NOTE-**

*A clearance to land means that appropriate separation on the landing runway will be ensured. A landing clearance does not relieve the pilot from compliance with any previously issued restriction.*

### 3-10-6. ANTICIPATING SEPARATION

Landing clearance to succeeding aircraft in a landing sequence need not be withheld if you observe the positions of the aircraft and determine that prescribed runway separation will exist when the aircraft cross the landing threshold. Issue traffic information to the succeeding aircraft if not previously reported and appropriate traffic holding in position or departing prior to their arrival.

**EXAMPLE-**

*"American Two Forty-Five cleared to land, number two following United Boeing Seven-Thirty-Seven two mile final, traffic will depart prior to your arrival."*

*"American Two Forty-Five cleared to land, number two following United Boeing Seven-Thirty-Seven two mile final, traffic will be an MD 88 holding in position."*

**REFERENCE-**

*FAAO 7110.65, Closed/Unsafe Runway Information, Para 3-3-2.*

*FAAO 7110.65, Landing Clearance, Para 3-10-5b, not required if utilizing the provisions of Para 3-10-6.*

### 3-10-7. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION

When an arriving aircraft reports at a position where he/she should be seen but has not been visually observed, advise the aircraft as a part of the landing clearance that it is not in sight and restate the landing runway.

**PHRASEOLOGY-**

*NOT IN SIGHT, RUNWAY (number) CLEARED TO LAND.*

**NOTE-**

*Aircraft observance on the BRITE/DBRITE/TDW display satisfies the visually observed requirement.*

### 3-10-8. WITHHOLDING LANDING CLEARANCE

Do not withhold a landing clearance indefinitely even though it appears a violation of Title 14 of the Code of Federal Regulations has been committed. The apparent violation might be the result of an emergency situation. In any event, assist the pilot to the extent possible.

### 3-10-9. RUNWAY EXITING

a. Instruct aircraft where to turn-off the runway after landing, when appropriate, and advise the aircraft to hold short of a runway or taxiway if required for traffic.

**PHRASEOLOGY-**

*TURN LEFT/RIGHT (turning point),*

*or*

*IF ABLE, TURN LEFT/RIGHT (turning point)*

*and if required*

*HOLD SHORT OF (runway).*

**NOTE-**

*Runway exiting or taxi instructions should not normally be issued to an aircraft prior to, or immediately after, touchdown.*

b. Taxi instructions shall be provided to the aircraft by the local controller when:

1. Compliance with ATC instructions will be required before the aircraft can change to ground control, or

2. The aircraft will be required to enter a taxiway/runway/ramp area, other than the one used to exit the landing runway, in order to taxi clear of the landing runway.

**EXAMPLE-**

*"U.S. Air Ten Forty Two, turn right next taxiway, cross taxiway Bravo, hold short of taxiway Charlie, contact ground point seven."*

**NOTE-**

1. *An aircraft is expected to taxi clear of the runway unless otherwise directed by ATC. Pilots shall not exit the landing runway on to an intersecting runway unless authorized by ATC. In the absence of ATC instructions, an aircraft should taxi clear of the landing runway even if that requires the aircraft to protrude into or enter another taxiway/ramp area. This does not authorize an aircraft to cross a subsequent taxiway or ramp after clearing the landing runway.*

2. The pilot is responsible for ascertaining when the aircraft is clear of the runway.

c. Ground control and local control shall protect a taxiway/runway/ramp intersection if an aircraft is required to enter that intersection to clear the landing runway.

**REFERENCE-**

FAAO 7210.3, *Use of Active Runways*, Para 10-1-7.

d. Request a read back of runway hold short instructions when not received from the pilot.

**EXAMPLE-**

*"American Four Ninety-two, turn left at Taxiway Charlie, hold short of Runway 27 Right."*

*"American Four Ninety Two, Roger."*

*"American Four Ninety-two, read back hold instructions."*

**NOTE-**

*Read back hold instructions phraseology may be initiated for any point on a movement area when the controller believes the read back is necessary.*

### 3-10-10. ALTITUDE RESTRICTED LOW APPROACH

A low approach with an altitude restriction of not less than 500 feet above the airport may be authorized except over an aircraft in takeoff position or a departure aircraft. Do not clear aircraft for restricted altitude low approaches over personnel unless airport authorities have advised these personnel that the approaches will be conducted. Advise the approaching aircraft of the location of applicable ground traffic, personnel, or equipment.

**NOTE-**

1. The 500 feet restriction is a minimum. Higher altitudes should be used when warranted. For example, 1,000 feet is more appropriate for heavy aircraft operating over unprotected personnel or small aircraft on or near the runway.

2. This authorization includes altitude restricted low approaches over preceding landing or taxiing aircraft. Restricted low approaches are not authorized over aircraft in takeoff position or departing aircraft.

**PHRASEOLOGY-**

**CLEARED LOW APPROACH AT OR ABOVE** (altitude).  
**TRAFFIC** (description and location).

**REFERENCE-**

FAAO 7110.65, *Vehicles/Equipment/Personnel on Runways*, Para 3-1-5.

FAAO 7110.65, *Traffic Information*, Para 3-1-6.

FAAO 7110.65, *Light Signals*, Para 3-2-1.

FAAO 7110.65, *Timely Information*, Para 3-3-3.

FAAO 7110.65, *Taxi into Position and Hold (TIPH)*, Para 3-9-4.

FAAO 7110.65, *Same Runway Separation*, Para 3-10-3.

### 3-10-11. CLOSED TRAFFIC

Approve/disapprove pilot requests to remain in closed traffic for successive operations subject to local traffic conditions.

**PHRASEOLOGY-**

**LEFT/RIGHT** (if required) **CLOSED TRAFFIC**

**APPROVED. REPORT** (position if required),

or

**UNABLE CLOSED TRAFFIC**, (additional information as required).

**NOTE-**

*Segregated traffic patterns for helicopters to runways and other areas may be established by letter of agreement or other local operating procedures.*

**REFERENCE-**

FAAO 7110.65, *Runway Proximity*, Para 3-7-4.

FAAO 7110.65, *Taxi into Position and Hold (TIPH)*, Para 3-9-4.

FAAO 7110.65, *Same Runway Separation*, Para 3-10-3.

### 3-10-12. OVERHEAD MANEUVER

Issue the following to arriving aircraft that will conduct an overhead maneuver:

a. Pattern altitude and direction of traffic. Omit either or both if standard or when you know the pilot is familiar with a nonstandard procedure.

**PHRASEOLOGY-**

**PATTERN ALTITUDE** (altitude). **RIGHT TURNS.**

b. Request for report on initial approach.

**PHRASEOLOGY-**

**REPORT INITIAL.**

c. "Break" information and request for pilot report. Specify the point of "break" only if nonstandard. Request the pilot to report "break" if required for traffic or other reasons.

**PHRASEOLOGY-**

**BREAK AT** (specified point).

**REPORT BREAK.**

d. Overhead maneuver patterns are developed at airports where aircraft have an operational need to conduct the maneuver. An aircraft conducting an overhead maneuver is on VFR and the IFR flight plan is cancelled when the aircraft reaches the "initial point" on the initial approach portion of the maneuver. The existence of a standard overhead maneuver pattern does not eliminate the possible requirement for an aircraft to conform to conventional rectangular patterns if an overhead maneuver cannot be approved.

**NOTE-**

Aircraft operating to an airport without a functioning control tower must initiate cancellation of the IFR flight plan prior to executing the overhead maneuver or after landing.

**Overhead Maneuver**

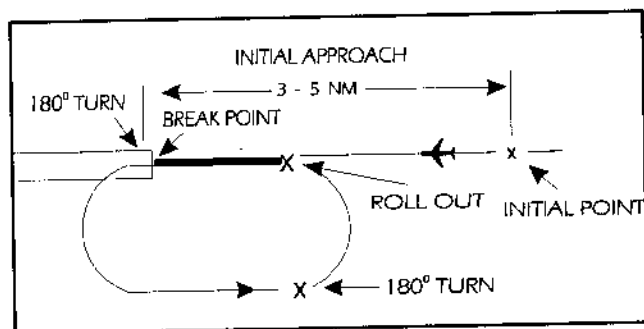


FIG 3-10-13

**EXAMPLE-**

"Air Force Three Six Eight, Runway Six, wind zero seven zero at eight, pattern altitude six thousand, report initial."

"Air Force Three Six Eight, break at midfield, report break."

"Air Force Three Six Eight, cleared to land."

"Alfa Kilo Two Two, Runway Three One, wind three three zero at one four, right turns, report initial."

"Alfa Kilo Two Two, report break."

"Alfa Kilo Two Two, cleared to land."

e. Timely and positive controller action is required to prevent a conflict when an overhead pattern could extend into the path of a departing or a missed approach aircraft. Local procedures and/or coordination requirements should be set forth in an appropriate letter of agreement, facility directive, base flying manual etc., when the frequency of occurrence warrants.

**3-10-13. SIMULATED FLAMEOUT (SFO) APPROACHES/PRACTICE PRECAUTIONARY APPROACHES**

a. Authorize military aircraft to make SFO/practice precautionary approaches if the following conditions are met:

1. A letter of agreement or local operating procedure is in effect between the military flying organization and affected ATC facility.

(a) Include specific coordination, execution, and approval procedures for the operation.

(b) The exchange or issuance of traffic information as agreed to in any interfacility letter of agreement is accomplished.

(c) Include a statement in the procedure that clarifies at which points SFO's may/may not be terminated. (See FIG 3-10-14.)

2. Traffic information regarding aircraft in radio communication with or visible to tower controllers which are operating within or adjacent to the flameout maneuvering area is provided to the SFO aircraft and other concerned aircraft.

3. The high-key altitude or practice precautionary approach maneuvering altitudes of the aircraft concerned are obtained prior to approving the approach. (See FIG 3-10-14.)

**NOTE-**

1. Practice precautionary/flameout approaches are authorized only for specific aircraft. Precautionary approaches, however, might be made by any aircraft when engine failure is considered possible. The practice precautionary approach maneuvering area/altitudes may not conform to the standard flameout maneuvering area/altitudes.

2. Simulated flameout approaches generally require high descent rates. Visibility ahead and beneath the aircraft is greatly restricted.

3. Pattern adjustments for aircraft conducting SFO's may impact the effectiveness of SFO training.

**REFERENCE-**

FAAO 7110.65, Low Approach and Touch-and-Go, Para 4-8-12.

FAAO 7610.4, Simulated Flame-Out (SFO) Operations, Para 9-3-7.

b. For overhead simulated flameout approaches:

1. Request a report at the entry point.

**PHRASEOLOGY-**

REPORT (high or low) KEY (as appropriate).

2. Request a report at low key.

**PHRASEOLOGY-**  
**REPORT LOW KEY.**

3. At low key, issue low approach clearance or alternate instructions.

**REFERENCE-**  
FAAO 7110.65, *Sequence/Spacing Application*, Para 3-8-1.  
FAAO 7110.65, *Inflight Emergencies Involving Military Fighter-type Aircraft*, Para 10-1-7.  
FAAO 7610.4, *Simulated Flame-Out (SFO) Operations*, Para 9-3-7.

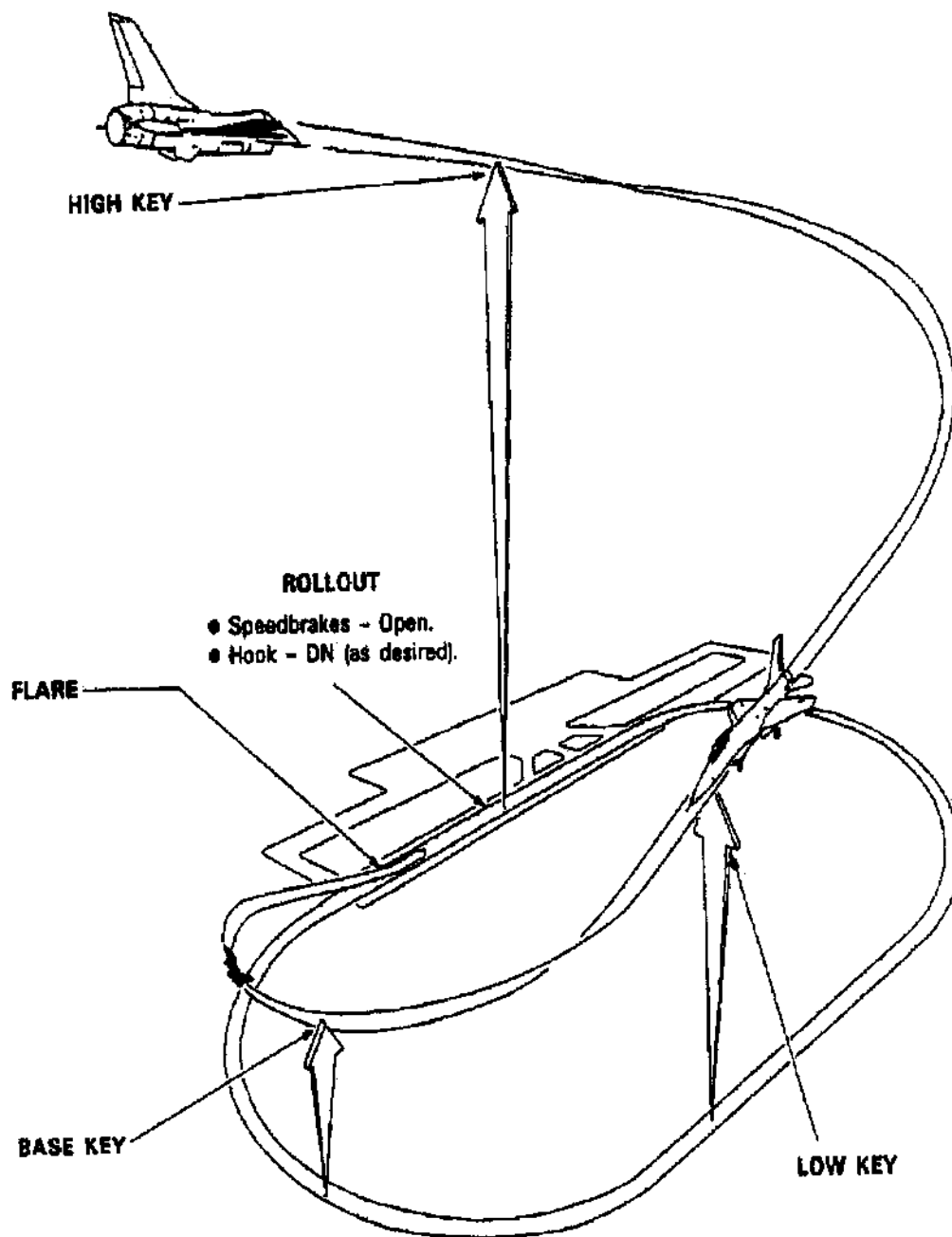
- c. For straight-in simulation flameout approaches:

1. Request a position report from aircraft conducting straight-in SFO approaches.

**PHRASEOLOGY-**  
**REPORT (distance) MILE SIMULATED FLAMEOUT FINAL.**

### Simulated Flameout [1]

## FLAMEOUT PATTERN



**FIG 3-10-14**

2. At the appropriate position on final (normally no closer than 3 miles), issue low approach clearance or alternate instruction. (See FIG 3-10-15.)

**Simulated Flameout [2]**

# **STRAIGHT-IN FLAMEOUT PATTERN**

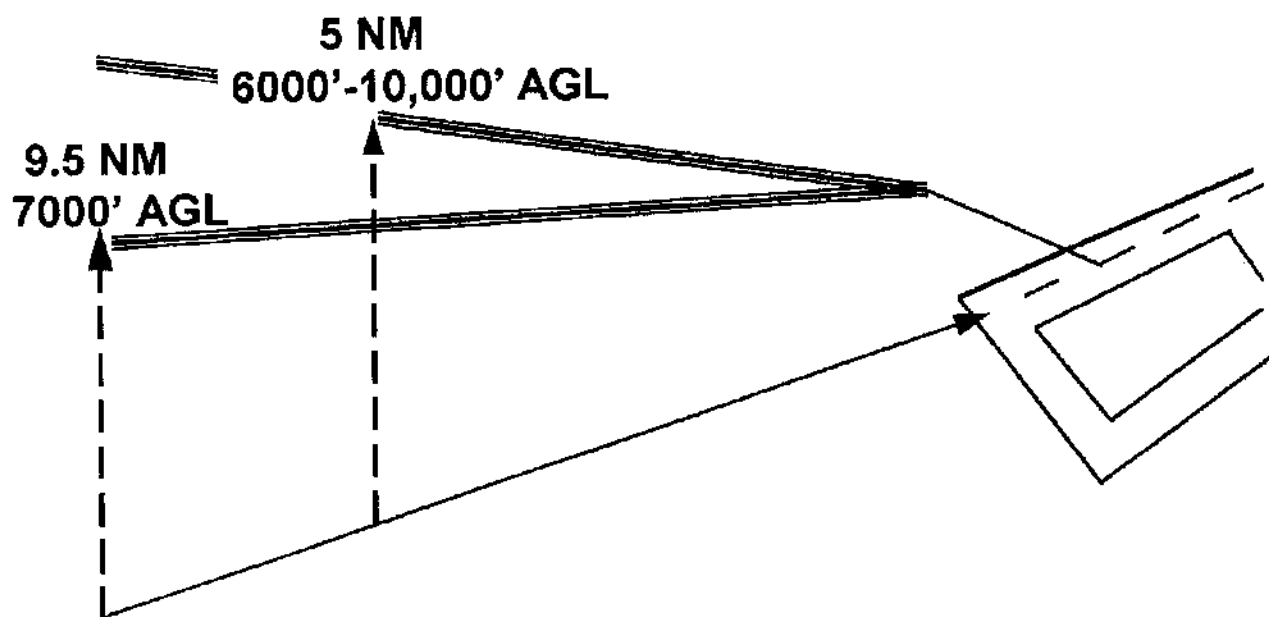


FIG 3-10-15



## Section 5. Altitude Assignment and Verification

### 4-5-1. VERTICAL SEPARATION MINIMA

Separate instrument flight rules (IFR) aircraft using the following minima between altitudes:

- a. Up to and including FL 290- 1,000 feet.
- b. Above FL 290- 2,000 feet, except:
  1. In oceanic airspace, above FL 450 between a supersonic and any other aircraft- 4,000 feet.
  2. Above FL 600 between military aircraft- 5,000 feet.
  3. Apply 1,000 feet between approved aircraft if:
    - (a) Operating within airspace and altitude(s) designated for reduced vertical separation minimum (RVSM) or,
    - (b) Operating within RVSM transition airspace and designated altitude(s) if:
      - (1) En route to/from RVSM designated airspace; or,
      - (2) Within the Anchorage FIR.

#### NOTE-

1. Oceanic separation procedures are supplemented in Chapter 8; Section 7, Section 8, Section 9, and Section 10.

2. RVSM and RVSM transition airspace is designated in ICAO Regional Supplementary Document, Doc. 7030.4, and via International NOTAM.

#### REFERENCE-

FAAO 7110.65, Vertical Application, Para 5-5-4.

FAAO 7110.65, Application, Para 6-6-1.

FAAO 7110.65, Military Operations Above FL 600, Para 9-3-11.

### 4-5-2. FLIGHT DIRECTION

Clear aircraft at altitudes according to the TBL 4-5-1.

Altitude Assignment

Aircraft Operating	On course degrees magnetic	Assign	Examples
Below 3,000 feet above surface	Any course	Any altitude	
Below FL 290	0 through 179	Odd cardinal altitude or flight levels at intervals of 2,000 feet	3,000 5,000, FL 250, FL 270
	180 through 359	Even cardinal altitude or flight levels at intervals of 2,000 feet	4,000, 6000, FL 240, FL 260
At or above FL 290	0 through 179	Odd cardinal flight levels at intervals of 4,000 feet beginning with FL 290	FL 290, FL 330, FL 370
	180 through 359	Odd cardinal flight levels at intervals of 4,000 feet beginning with FL 310	FL 310, FL 350, FL 390
One way routes (except in composite systems)	Any course	Any cardinal altitude or flight level below FL 290 or any odd cardinal flight level at or above FL 290	FL 270, FL 280, FL 310, FL 330
Within an ALTRV	Any course	Any altitude or flight level	
In transition to/from or within Oceanic airspace where composite separation is authorized	Any course	Any odd or even cardinal flight level including those above FL 290	FL 280, FL 290, FL 300, FL 310, FL 320, FL 330, FL 340
In aerial refueling tracks and anchors	Any course	Altitude blocks as requested. Any altitude or flight level	050B080, FL 1 80B220, FL 280B310
Aircraft within RVSM or RVSM transition airspace	Any course	Any designated cardinal altitude	FL 330, FL 340, FL 350, FL 360

TBL 4-5-1

#### NOTE-

Oceanic separation procedures are supplemented in Chapter 8; Section 7, Section 8, Section 9, and Section 10.

**REFERENCE-**FAAO 7110.65, *Exceptions, Para 4-5-3.*FAAO 7110.65, *Altitude Assignments, Para 7-7-5.*FAAO 7110.65, *Separation Minima, Para 9-4-2.***4-5-3. EXCEPTIONS**

When traffic, meteorological conditions, or aircraft operational limitations prevent assignment of altitudes prescribed in para 4-5-2, Flight Direction, assign any cardinal altitude or flight level below FL 290 or any odd cardinal flight level at or above FL 290 without regard to direction of flight as follows:

**NOTE-**

See para 2-3-9, *Control Symbolology, for control abbreviations and symbols to be used in conjunction with this paragraph.*

a. For traffic conditions, take this action only if one of the following conditions exists:

1. Aircraft remain within a facility's area and prior approval is obtained from other affected positions or sectors or the operations are covered in a Facility Directive.

2. Aircraft will proceed beyond the facility's area and specific operations and procedures permitting random altitude assignment are covered in a letter of agreement between the appropriate facilities.

**NOTE-**

*Those en route facilities using host software that provides capability for passing interim altitude shall include the specific operations and procedures for use of this procedure in a letter of agreement between the appropriate facilities.*

b. Military aircraft are operating on random routes and prior approval is obtained from the facility concerned.

c. For meteorological conditions, take this action only if you obtain prior approval from other affected positions or sectors within your facility and, if necessary, from the adjacent facility concerned.

d. For aircraft operational limitations, take this action only if the pilot informs you the available appropriate altitude exceeds the operational limitations of his/her aircraft and only after you obtain prior approval from other affected positions or sectors within your facility and, if necessary, from the adjacent facility concerned.

e. For mission requirements, take this action only when the aircraft is operating on an MTR.

**REFERENCE-**FAAO 7110.65, *Altitude Assignments, Para 7-7-5.*FAAO 7110.65, *Separation Minima, Para 9-4-2.***4-5-4. LOWEST USABLE FLIGHT LEVEL**

If a change in atmospheric pressure affects a usable flight level in your area of jurisdiction, use TBL 4-5-2 to determine the lowest usable flight level to clear aircraft at or above 18,000 feet MSL.

**Lowest Usable FL**

Altitude Setting	Lowest Usable FL
29.92" or higher	180
29.91" to 28.92"	190
28.91" to 27.92"	200

TBL 4-5-2

**REFERENCE-**FAAO 7110.65, *Separation Minima, Para 9-4-2.***4-5-5. ADJUSTED MINIMUM FLIGHT LEVEL**

When the prescribed minimum altitude for IFR operations is at or above 18,000 feet MSL and the atmospheric pressure is less than 29.92", add the appropriate adjustment factor from TBL 4-5-3 to the flight level equivalent of the minimum altitude in feet to determine the adjusted minimum flight level.

**Minimum FL Adjustment**

Altitude Setting	Adjustment Factor
29.92" or higher	None
29.91" to 29.42"	500 feet
29.41" to 28.92"	1,000 feet
28.91" to 28.42"	1,500 feet
28.41" to 27.92"	2,000 feet

TBL 4-5-3

**4-5-6. MINIMUM EN ROUTE ALTITUDES**

Except as provided in subparas a and b below, assign altitudes at or above the MEA for the route segment being flown. When a lower MEA for subsequent segments of the route is applicable, issue the lower MEA only after the aircraft is over or past the Fix/NAVAID beyond which the lower MEA applies unless a crossing restriction at or above the higher MEA is issued.

a. An aircraft may be cleared below the MEA but not below the MOCA for the route segment being flown if the altitude assigned is at least 300 feet above the floor of controlled airspace and one of the following conditions are met:

**NOTE-**

*Controllers must be aware that in the event of radio communications failure, a pilot will climb to the MEA for the route segment being flown.*

## Section 4. Lateral Separation

### 8-4-1. APPLICATION

Separate aircraft by assigning different flight paths whose widths or protected airspace do not overlap.

Within that portion of the Gulf of Mexico Low Offshore airspace controlled by Houston ARTCC, use 12 NM between aircraft whose flight paths are defined by published Grid System waypoints.

#### NOTE-

1. The Grid System is defined as those waypoints contained within the Gulf of Mexico Low Offshore airspace and published on the IFR Vertical Flight Reference Chart.

2. Lateral separation minima is contained in:  
 Section 7, North Atlantic ICAO Region.  
 Section 8, Caribbean ICAO Region.  
 Section 9, Pacific ICAO Region.  
 Section 10, North American ICAO Region - Arctic CTA.

### 8-4-2. SEPARATION METHODS

Lateral separation exists for:

#### a. Nonintersecting flight paths:

1. When the required distance is maintained between the flight paths; or (See FIG 8-4-1.)

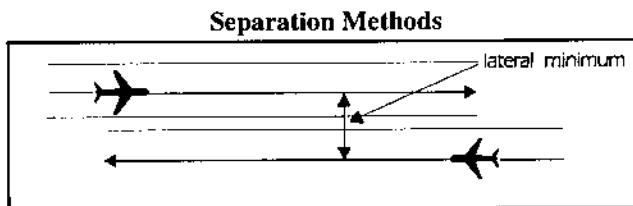


FIG 8-4-1

2. When reduced route protected airspace is applicable, and the protected airspace of the flight paths do not overlap; or (See FIG 8-4-2.)

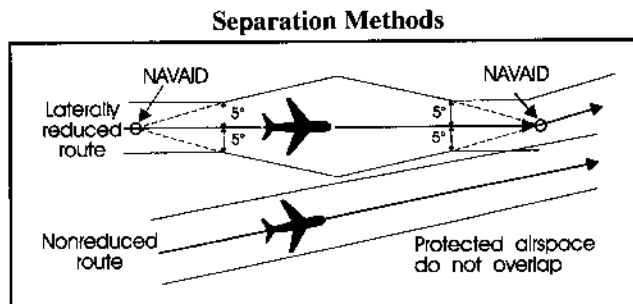


FIG 8-4-2

3. When aircraft are crossing an oceanic boundary and are entering an airspace with a larger lateral minimum than the airspace being exited; and

(a) The smaller separation exists at the boundary; and

(b) Flight paths diverge by 15° or more until the larger minimum is established. (See FIG 8-4-3.)

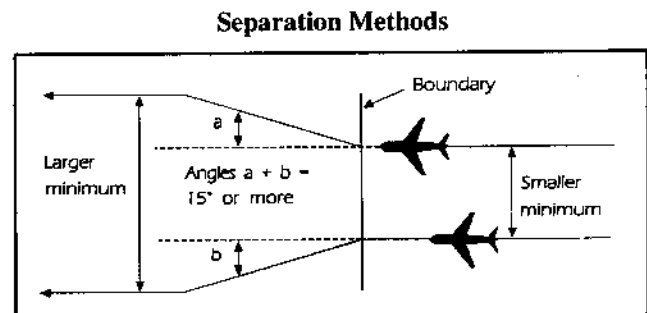


FIG 8-4-3

b. Intersecting flight paths with constant and same width protected airspace when either aircraft is at or beyond a distance equal to the applicable lateral separation minimum measured perpendicular to the flight path of the other aircraft. (See FIG 8-4-4.)

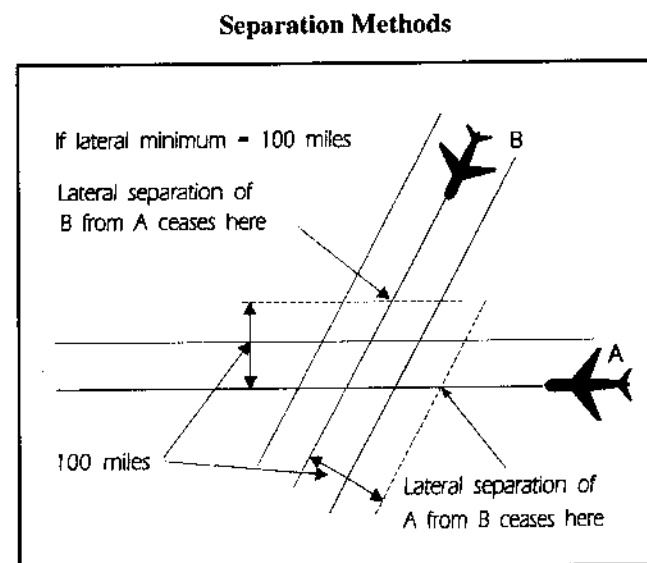


FIG 8-4-4

c. Intersecting flight paths with constant but different width protected airspace when either aircraft is at or beyond a distance equal to the sum of the protected airspace of both flight paths measured perpendicular to the flight path of the other aircraft. (See FIG 8-4-5.)

d. Intersecting flight paths with variable width protected airspace when either aircraft is at or beyond a distance equal to the sum of the protected airspace of both flight paths measured perpendicular to the flight path of the other aircraft. Measure protected airspace for each aircraft perpendicular to its flight path at the first point or the last point, as applicable, of protected airspace overlap.

#### Separation Methods

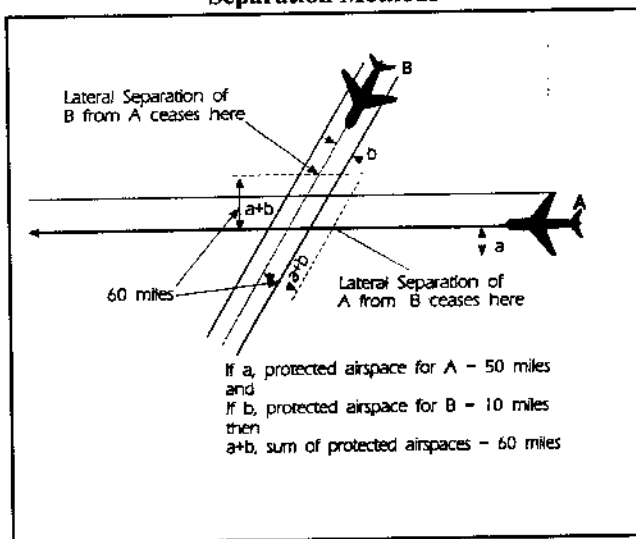


FIG 8-4-5

#### NOTE-

In FIG 8-4-5, the protected airspace for westbound flight A is distance "a" (50 miles), and for southwestbound flight B, distance "b" (10 miles). Therefore, the sum of distances "a" and "b"; i.e., the protected airspace of Aircrafts A and B, establishes the lateral separation minimum (60 miles) applicable for either flight relevant to the other.

#### Separation Methods

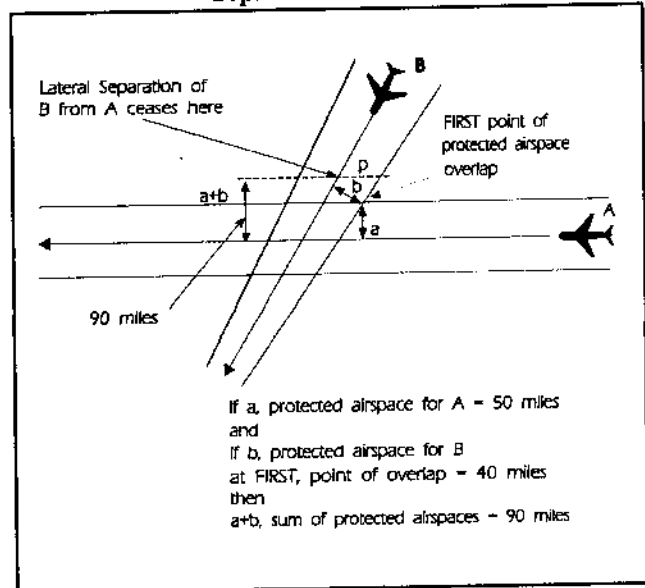


FIG 8-4-6

#### NOTE-

(See FIG 8-4-6.) At the first point of protected airspace overlap, the protected airspace for westbound flight A is distance "a" (50 miles), and for southwestbound flight B, distance "b" (40 miles). The sum of distances "a" and "b" (90 miles) establishes the lateral separation minimum applicable in this example for either flight as it approaches the intersection. For example, Aircraft B should be vertically separated from Aircraft A by the time it reaches point "p."

## Section 8. Caribbean ICAO Region

### 8-8-1. APPLICATION

Provide air traffic control services in the Caribbean ICAO Region with the procedures and minima contained in this section except when noted otherwise.

### 8-8-2. VERTICAL SEPARATION

Provide vertical separation in accordance with Chapter 4, IFR, Section 5, Altitude Assignment and Verification.

### 8-8-3. LONGITUDINAL SEPARATION

Provide longitudinal separation between aircraft as follows:

#### a. Supersonic flight:

1. Provided the Mach number technique is applied in accordance with para 8-3-3, Mach Number Technique;

(a) 10 minutes; or

(b) 10 minutes when one or both aircraft has been cleared to commence the deceleration/descent phase of supersonic flight and the preceding aircraft is maintaining a Mach number which is the same as or greater than that of the following aircraft.

2. 15 minutes between all other aircraft.

b. Operations in the West Atlantic Route System (WATRS) (subsonic flight):

1. Between all aircraft within the San Juan CTA/FIR 15 minutes; or

2. Aircraft operating at or above FL 280 within the WATRS area or west of 60° West when in transit to or from WATRS;

(a) 10 minutes, provided the Mach number technique is applied in accordance with para 8-3-3, Mach Number Technique; and

(1) Where tracks diverge from the common point:

(2) At least 10 minutes, longitudinal separation exists at the point where the tracks diverge; and

(3) At least 5 minutes, longitudinal separation will exist where the minimum lateral separation is achieved; and

(4) At least the minimum lateral separation will be achieved at or before the next significant point; or, if not, within 90 minutes of the time the second aircraft passes the common point or is within 600 NM of the common point, whichever is estimated to occur first;

#### NOTE-

The WATRS area is defined as beginning at a point 27°00'N/77°00'W direct to 20°00'N/67°00'W direct to 18°00'N/62°00'W direct to 18°00'N/60°00'W direct to 38°30'N/60°00'W direct to 38°30'N/69°15'W, thence counterclockwise along the New York Oceanic CTA/FIR boundary to the Miami Oceanic CTA/FIR boundary, thence southbound along the Miami Oceanic CTA/FIR boundary to the point of beginning.

(b) If the aircraft have not reported over a common point, it is possible to ensure, by radar or other approved means, that the appropriate time interval will exist at the common point from which they either follow the same track or continuously diverging tracks;

3. Between 9 and 5 minutes, provided the Mach number technique is applied in accordance with para 8-3-3, Mach Number Technique; and

(1) It is possible to ensure by radar or other approved means, that the required time interval exists and will exist at the common point from which they either follow the same track or continuously diverging tracks; and

(2) The preceding aircraft is maintaining a greater Mach number than the following aircraft in accordance with the following:

[a] 9 minutes, if the preceding aircraft is Mach 0.02 faster than the following aircraft;

[b] 8 minutes, if the preceding aircraft is Mach 0.03 faster than the following aircraft;

[c] 7 minutes, if the preceding aircraft is Mach 0.04 faster than the following aircraft;

[d] 6 minutes, if the preceding aircraft is Mach 0.05 faster than the following aircraft;

[e] 5 minutes, if the preceding aircraft is Mach 0.06 faster than the following aircraft.

**NOTE-**

*When the preceding aircraft is maintaining a greater Mach number than the following aircraft, in accordance with the table above, and the aircraft will follow continuously diverging tracks so that the minimum lateral separation will be achieved by the next significant point, the requirement stated above, to have at least 5 minutes longitudinal separation where the minimum lateral separation is achieved, may be disregarded.*

c. Between turbojet aircraft meeting the MNPS and operating in the New York oceanic CTA/FIR wholly or partly in MNPS airspace (*subsonic flight*):

1. 10 minutes, provided the Mach number technique is applied in accordance with para 8-3-3, Mach Number Technique; and

(a) Where tracks diverge from the common point:

(1) At least 10 minutes, longitudinal separation exists at the point where the tracks diverge; and

(2) At least 5 minutes, longitudinal separation will exist where 60 NM lateral separation is achieved; and

**NOTE-**

*When the preceding aircraft is maintaining a greater Mach number than the following aircraft in accordance with this subparagraph, and the aircraft will follow continuously diverging tracks so that 60 NM lateral separation will be achieved by the next significant point, the requirement to have at least 5 minutes longitudinal separation where 60 NM lateral separation is achieved, may be disregarded.*

(3) At least 60 NM lateral separation will be achieved at or before the next significant point (normally within ten degrees of longitude along track(s)) or, if not, within 90 minutes of the time the second aircraft passes the common point or is within 600 NM of the common point, whichever is estimated to occur first.

2. Between 9 and 5 minutes, provided the Mach number technique is applied in accordance with para 8-3-3, Mach Number Technique; and

(a) It is possible to ensure, by radar or other approved means, that the required time interval exists and will exist at the common point from which they either follow the same track or continuously diverging tracks; and

(b) The preceding aircraft is maintaining a greater Mach number than the following aircraft in accordance with the following:

(1) 9 minutes, if the preceding aircraft is Mach 0.02 faster than the following aircraft;

(2) 8 minutes, if the preceding aircraft is Mach 0.03 faster than the following aircraft;

(3) 7 minutes, if the preceding aircraft is Mach 0.04 faster than the following aircraft;

(4) 6 minutes, if the preceding aircraft is Mach 0.05 faster than the following aircraft;

(5) 5 minutes, if the preceding aircraft is Mach 0.06 faster than the following aircraft.

3. 15 minutes, between turbojet aircraft not covered in subparas c1 and 2.

d. Operations between aircraft not covered in subparas b or c (*subsonic flight*):

1. Operations at or above FL 200.

(a) 10 minutes, between turbojet aircraft, provided the Mach number technique is applied, in accordance with para 8-3-3, Mach Number Technique.

(b) Between turbojet aircraft, provided the Mach number technique is applied in accordance with para 8-3-3, Mach Number Technique, and *only* when it is possible to ensure by radar or other approved means that the required time interval exists and will exist at the common point, and the preceding aircraft is maintaining a greater Mach number than the following aircraft in accordance with the following:

(1) 9 minutes, if the preceding aircraft is Mach 0.02 faster than the following aircraft;

(2) 8 minutes, if the preceding aircraft is Mach 0.03 faster than the following aircraft;

(3) 7 minutes, if the preceding aircraft is Mach 0.04 faster than the following aircraft;

(4) 6 minutes, if the preceding aircraft is Mach 0.05 faster than the following aircraft;

(5) 5 minutes, if the preceding aircraft is Mach 0.06 faster than the following aircraft.

(c) Between all other turbojet aircraft:  
15 minutes.

2. 20 minutes:

(a) Between aircraft operating below FL 200 west of 55° West;

(b) Between aircraft operating at all levels east of 55° West;

## (c) Within the New York CTA/FIR;

(1) Between turbojet aircraft not covered by subparas d1(a) and (b) above;

(2) Between other than turbojet aircraft operating along routes extending between the U.S., Canada, or Bermuda and the Caribbean ICAO Region.

**8-8-4. LATERAL SEPARATION**

Provide lateral separation by assigning different flight paths whose widths or protected airspace do not overlap. Apply the following:

## a. 60 NM:

1. Supersonic aircraft operating above FL 275 within the New York oceanic CTA/FIR.

2. Supersonic aircraft operating at or above FL 450 not covered in subpara 1 above.

**NOTE-**

*This reduced lateral separation shall not be used if track keeping capability of the aircraft has been reduced for any reason.*

3. Aircraft which meet the MNPS and while operating in the New York oceanic CTA/FIR which are in transit to or from NAT MNPS airspace.

## b. 90 NM between aircraft operating:

## 1. Within WATRS;

2. West of 55° West between the U.S., Canada, or Bermuda and points in the Caribbean ICAO Region.

c. 100 NM between aircraft operating west of 55° West not covered by subparas a or b above.

d. 120 NM between aircraft operating east of 55° West.

**8-8-5. VFR CLIMB AND DESCENT**

a. In the Houston, Miami, and San Juan CTA's, IFR flights may be cleared to climb and descend in VFR conditions only:

1. When requested by the pilot; and

2. Between sunrise and sunset.

## b. Apply the following when the flight is cleared:

1. If there is a possibility that VFR conditions may become impractical, issue alternative instructions.

2. Issue traffic information to aircraft that are not separated in accordance with the minima in this section.

**NOTE-**

1. ATC may suggest that the pilot climb or descend to a contingency altitude (1,000 feet above or below that assigned if operating in an area of 2,000 feet standard vertical separation; 500 feet above or below that assigned if operating in an area of 1,000 feet standard vertical or composite separation).

2. Once the deviating aircraft has begun a maneuver without an ATC clearance in response to weather or other contingency, the controller is not responsible for providing standard separation between the aircraft that is deviating and any other aircraft or airspace. Responsibility for providing standard separation resumes when the deviating aircraft has advised ATC that it has returned to its original or a revised ATC cleared level and track.

c. To the extent practical, provide traffic information for all affected aircraft.

**PHRASEOLOGY-**

STANDARD SEPARATION NOT AVAILABLE; SUGGEST CLIMB (or descent) TO (appropriate altitude); TRAFFIC (position and altitude); REPORT DEVIATION COMPLETE.

d. The pilot will follow the advisory altitude when approximately 10 NM from track.

e. At the completion of the deviation, ATC shall establish standard separation as soon as practicable.

**NOTE-**

In the event that pilot/controller communications cannot be established or a revised ATC clearance is not available, pilots will follow the procedures outlined in the Aeronautical Information Manual (AIM) and Chart Supplements.



d. The lateral airspace to be protected along an MTR is the designated width of the route.

e. Prior to an aircraft entering an MTR, request the pilot's estimate for the route's exit/alternate exit fix, the pilot's requested altitude after exiting and, if applicable, the number of reentries on a Strategic Training Range (STR).

#### **PHRASEOLOGY-**

(Call sign) **CONFIRM YOUR EXIT FIX ESTIMATE AND REQUESTED ALTITUDE AFTER EXIT,**

and if applicable,

#### **THE NUMBER OF REENTRIES.**

f. Forward estimates for exit/alternate exit fixes, requested altitude after exit, and, if applicable, the number of reentries on the STR.

g. Apply the procedures of para 6-1-2, Nonreceipt of Position Report, based upon the pilot's estimate for the route exit fix.

h. Clearance may be issued to amend or restrict operations on a route for ATC considerations. Where a route has been designated MARSA in accordance with subpara c, ATC shall not amend or restrict operations in such a manner as to compromise MARSA provisions.

#### **NOTE-**

*When MARSA is provided through route scheduling and circumstances prevent the pilot from entering the route within established time limits, it shall be the responsibility of the pilot to inform the ATC facility and advise his/her intentions.*

i. If an aircraft on an IR experiences a two-way radio communications failure and you are unable to determine if the aircraft is proceeding VFR in accordance with 14 CFR Section 91.185(b) or the aircraft has not been positively radar identified:

1. Provide separation to the destination airport based on the aircraft complying with the following:

(a) Maintain to the exit/alternate exit fix the higher of the following altitudes:

(1) The minimum IFR altitude for each of the remaining route segment(s) remaining on the route.

(2) The highest altitude assigned in the last ATC clearance.

(b) Depart the exit/alternate exit fix at the appropriate altitude specified in subpara (a) above, then climb/descend to the altitude filed in the flight plan for the remainder of the flight, or

#### **NOTE-**

*In the event of a two-way communications failure, ATC will be based on the following anticipated pilot action at the exit fix. Unless otherwise covered in a letter of agreement, and if the pilot is unable to comply with the VFR provisions of 14 CFR Section 91.185/FLIP IFR Supplement, the pilot will exercise his/her emergency authority, squawk transponder CODE 7700, depart the exit/alternate exit fix and climb/descend (continuing to squawk 7700) to the altitude filed in the flight plan. Subsequent transponder operations will be in accordance with para 10-4-4, Communications Failure. Air traffic controller action from the exit fix is as prescribed in para 10-1-1, Emergency Determinations.*

(c) Proceed in accordance with the lost communication procedure contained in letters of agreement.

2. Continue to monitor the last ATC assigned discrete code.

#### **NOTE-**

*Pilots who experience a two-way radio failure will adjust their transponder to CODE 7700 during climb/descent to altitude filed for the next leg of the flight plan; then change to CODE 7600 for a period of 15 minutes. At the end of each 15-minute period, he/she will squawk 7700 for a period of 1 minute; all other times he/she will squawk 7600.*

j. Impose delays, if needed, to eliminate conflict with nonparticipating IFR aircraft when necessary to preclude denial of IR usage. Advise the pilot of the expected length and reason for delay.

### **9-3-8. INTERCEPTOR OPERATIONS**

Provide maximum assistance to expedite the movement of interceptor aircraft on active air defense (scrambles) missions until the unknown aircraft is identified in accordance with the policies and procedures published in FAAO 7610.4, Special Military Operations.

#### **NOTE-**

*The FAA and the military have mutually agreed to the implementation of policies and procedures for control of air defense interceptor operations. Effective coordination and cooperation between FAA and the military at all levels are essential if policy objectives are to be met.*

a. The ADCF initiating the SCRAMBLE shall identify the mission as an active air defense mission.

b. ATC services shall be used for active air defense missions insofar as the circumstances and situation permits.

c. Upon request, the ATC facility shall expedite transfer of the control jurisdiction of the interceptors to the requesting ADCF.

### 9-3-9. LAW ENFORCEMENT OPERATIONS BY CIVIL AND MILITARY ORGANIZATIONS

#### a. Law enforcement alerts.

1. Aircraft lookouts shall not be distributed outside the FAA.

#### REFERENCE-

FAAO 1600.29, Law Enforcement Alert Message System.

FAAO 7210.3, Cooperation With Law Enforcement Agencies, Para 2-7-7.

2. Stolen aircraft alerts, including stolen aircraft summaries, may be distributed outside the FAA to: airport offices, air carriers, fixed base operators, and law enforcement agencies.

3. Upon receipt of knowledge concerning an aircraft for which a current law enforcement alert message is held, do the following:

(a) Forward any information on the aircraft to El Paso Intelligence Center (EPIC) and the requester when specified in the message.

(b) Immediately notify the cognizant Air Transportation Security division/staff by the most rapid means.

(c) DO NOT TAKE ANY OTHER ACTION AFFECTING THE AIRCRAFT, CARGO, CREW, OR PASSENGERS NOT NORMALLY RELATED TO JOB RESPONSIBILITIES.

#### b. Special law enforcement operations.

1. Special law enforcement operations include inflight identification, surveillance, interdiction and pursuit activities performed in accordance with official civil and/or military mission responsibilities.

2. To facilitate accomplishment of these special missions, exemptions from specified parts of Title 14 of the Code of Federal Regulations have been granted to designated departments and agencies. However, it is each organization's responsibility to apprise ATC of their intent to operate under an authorized exemption before initiating actual operations.

#### REFERENCE-

FAAO 7210.3, Authorizations and Exemptions from Title 14, Code of Federal Aviation Regulations (14 CFR), Para 18-3-1.

3. Additionally, some departments and agencies that perform special missions have been assigned coded identifiers to permit them to apprise ATC of ongoing mission activities and solicit special air traffic assistance.

#### REFERENCE-

FAAO 7110.67, Special Aircraft Operations by Law Enforcement/Military Organizations.

#### NOTE-

As specified in para 2-1-4, Operational Priority, priority of handling for aircraft operating with coded identifiers will be the same as that afforded to SAR aircraft performing a SAR mission.

#### c. Assistance to law enforcement aircraft operations.

1. Provide the maximum assistance possible to law enforcement aircraft, when requested, in helping them locate suspect aircraft.

2. Communicate with law enforcement aircraft, when possible and if requested, on a frequency not paired with your normal communications frequencies.

3. Do not allow assistance to law enforcement aircraft to violate any required separation minima.

4. Do not assist VFR law enforcement aircraft in any way that will create a situation which, in your judgement, places the aircraft in unsafe proximity to terrain or other aircraft.

### 9-3-10. MILITARY AERIAL REFUELING

Authorize aircraft to conduct aerial refueling along published or special tracks at their flight plan altitude, unless otherwise requested.

#### PHRASEOLOGY-

CLEARED TO CONDUCT REFUELING ALONG (number) TRACK,

or

FROM (fix) TO (fix),

and

MAINTAIN REFUELING LEVEL (altitude),

or

MAINTAIN (altitude),

or

COMMENCING AT (altitude), DESCENDING TO (altitude).

b. If the pilot states he/she is qualified for and capable of IFR flight, request him/her to file an IFR flight plan and then issue clearance to destination airport, as appropriate.

c. If the pilot states he/she is not qualified for or not capable of conducting IFR flight, or if he/she refuses to file an IFR flight plan, take whichever of the following actions is appropriate:

1. Inform the pilot of airports where VFR conditions are reported, provide other available pertinent weather information, and ask if he/she will elect to conduct VFR flight to such an airport.

2. If the action in subpara 1 above is not feasible or the pilot declines to conduct VFR flight to another airport, provide radar assistance if the pilot:

- (a) Declares an emergency.

- (b) Refuses to declare an emergency and you have determined the exact nature of the radar services the pilot desires.

3. If the aircraft has already encountered IFR conditions, inform the pilot of the appropriate terrain/obstacle clearance minimum altitude. If the aircraft is below appropriate terrain/obstacle clearance minimum altitude and sufficiently accurate position information has been received or radar identification is established, furnish a heading or radial on which to climb to reach appropriate terrain/obstacle clearance minimum altitude.

d. The following shall be accomplished on a Mode C equipped VFR aircraft which is in emergency but no longer requires the assignment of **Code 7700**:

1. **TERMINAL**. Assign a beacon code that will permit terminal minimum safe altitude warning (MSAW) alarm processing.

2. **EN ROUTE**. An appropriate keyboard entry shall be made to ensure en route MSAW (EMSAW) alarm processing.

#### 10-2-9. RADAR ASSISTANCE TECHNIQUES

Use the following techniques to the extent possible when you provide radar assistance to a pilot not qualified to operate in IFR conditions:

- a. Avoid radio frequency changes except when necessary to provide a clear communications channel.

- b. Make turns while the aircraft is in VFR conditions so it will be in a position to fly a straight course while in IFR conditions.

- c. Have pilot lower gear and slow aircraft to approach speed while in VFR conditions.

- d. Avoid requiring a climb or descent while in a turn if in IFR conditions.

- e. Avoid abrupt maneuvers.

- f. Vector aircraft to VFR conditions.

- g. The following shall be accomplished on a Mode C equipped VFR aircraft which is in emergency but no longer requires the assignment of Code 7700:

1. **TERMINAL**. Assign a beacon code that will permit terminal minimum safe altitude warning (MSAW) alarm processing.

2. **EN ROUTE**. An appropriate keyboard entry shall be made to ensure en route MSAW (EMSAW) alarm processing.

#### 10-2-10. EMERGENCY LOCATOR TRANSMITTER (ELT) SIGNALS

When an ELT signal is heard or reported:

- a. **EN ROUTE**. Notify the Rescue Coordination Center (RCC).

##### NOTE-

*FAA Form 7210-8, ELT INCIDENT, contains standardized format for coordination with the RCC.*

##### REFERENCE-

*FAAO 7210.3, FAA Form 7210-8, ELT Incident, Para 9-3-1.*

- b. **TERMINAL**. Notify the ARTCC which will coordinate with the RCC.

##### NOTE-

1. *Operational ground testing of emergency locator transmitters (ELT's) has been authorized during the first 5 minutes of each hour. To avoid confusing the tests with an actual alarm, the testing is restricted to no more than three audio sweeps.*

2. *Controllers can expect pilots to report aircraft position and time the signal was first heard, aircraft position and time the signal was last heard, aircraft position at maximum signal strength, flight altitude, and frequency of the emergency signal (121.5/243.0). (See AIM, Emergency Locator Transmitters, Para 6-2-5.)*

- c. **EN ROUTE**. Request DF facilities obtain fixes or bearings on signal. Forward bearings or fixes obtained plus any other pertinent information to the RCC.

d. **TERMINAL.** Attempt to obtain fixes or bearings on the signal.

e. Solicit the assistance of other aircraft known to be operating in the signal area.

f. **TERMINAL.** Forward fixes or bearings and any other pertinent information to the ARTCC.

**NOTE-**

*Fix information in relation to a VOR or VORTAC (radial-distance) facilitates accurate ELT plotting by RCC and should be provided when possible.*

g. **EN ROUTE.** When the ELT signal strength indicates the signal may be emanating from somewhere on an airport or vicinity thereof, notify the on-site airway facilities personnel and the Regional Operations Center (ROC) for their actions. This action is in addition to the above.

h. **TERMINAL.** When the ELT signal strength indicates the signal may be emanating from somewhere on the airport or vicinity thereof, notify the on-site airway facilities personnel and the ARTCC for their action. This action is in addition to the above.

i. Air Traffic personnel shall not leave their required duty stations to locate an ELT signal source.

**NOTE-**

*Portable handcarried receivers assigned to air traffic facilities (where no airway facilities personnel are available) may be loaned to responsible airport personnel or local authorities to assist in locating the ELT signal source.*

j. **EN ROUTE.** Notify the RCC, the ROC, and alerted DF facilities if signal source is located/terminated.

k. **TERMINAL.** Notify the ARTCC if signal source is located/terminated.

**REFERENCE-**

*FAAO 7110.65, Responsibility, Para 10-1-4.*

*FAAO 7110.65, Information Requirements, Para 10-2-1.*

## 10-2-11. AIRCRAFT BOMB THREATS

a. When information is received from any source that a bomb has been placed on, in, or near an aircraft for the purpose of damaging or destroying such aircraft, notify your supervisor or the facility air traffic manager. If the threat is general in nature, handle it as a "Suspicious Activity." When the threat is targeted against a specific aircraft and you are in contact with the suspect aircraft, take the following actions as appropriate:

**NOTE-**

1. Facility supervisors are expected to notify the appropriate offices, agencies, operators/air carriers according to applicable plans, directives, and FAAO 7210.3, Handling Bomb Threat Incidents, Para 2-1-8, or applicable military directives.

2. "Suspicious activity" is covered in FAAO 7210.3, Suspicious Activities, Para 2-7-6. Military facilities would report a "general" threat through the chain of command or according to service directives.

1. Advise the pilot of the threat.

2. Inform the pilot that technical assistance can be obtained from an FAA aviation explosives expert.

**NOTE-**

*An FAA aviation explosive expert is on call at all times and may be contacted by calling the FAA Operations Center, Washington, DC, Area Code 202-267-3333, ETN 521-0111, or DSN 667-5592. Technical advice can be relayed to assist civil or military air crews in their search for a bomb and in determining what precautionary action to take if one is found.*

3. Ask the pilot if he/she desires to climb or descend to an altitude that would equalize or reduce the outside air pressure/existing cabin air pressure differential. Issue or relay an appropriate clearance considering MEA, MOCA, MRA, and weather.

**NOTE-**

*Equalizing existing cabin air pressure with outside air pressure is a key step which the pilot may wish to take to minimize the damage potential of a bomb.*

4. Handle the aircraft as an emergency and/or provide the most expeditious handling possible with respect to the safety of other aircraft, ground facilities, and personnel.

**NOTE-**

*Emergency handling is discretionary and should be based on the situation. With certain types of threats, plans may call for a low-key action or response.*

5. Issue or relay clearances to a new destination if requested.

6. When a pilot requests technical assistance or if it is apparent that a pilot may need such assistance, do NOT suggest what actions the pilot should take concerning a bomb, but obtain the following information and notify your supervisor who will contact the FAA aviation explosives expert:

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U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

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8/10/00

# BRIEFING GUIDE



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

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**1. PARAGRAPH NUMBER AND TITLE:** 1-1-9. CONSTRAINTS GOVERNING SUPPLEMENTS AND PROCEDURAL DEVIATIONS

**2. BACKGROUND:** This change updates the address for the U.S. Navy office responsible for interface with the FAA.

**3. CHANGE:**

**OLD**

**1-1-9. CONSTRAINTS GOVERNING SUPPLEMENTS AND PROCEDURAL DEVIATIONS**

**Military Operations Interface Offices**

<i>Branch</i>	<i>Address</i>
U.S. Navy	CNO (OP-554)

*TBL 1-1-3*

**NEW**

**1-1-9. CONSTRAINTS GOVERNING SUPPLEMENTS AND PROCEDURAL DEVIATIONS**

**Military Operations Interface Offices**

<i>Branch</i>	<i>Address</i>
U.S. Navy	CNO <b><u>Office of the Chief of Naval Operations (N885F)</u></b> <b><u>2000 The Pentagon</u></b> <b><u>Washington, D.C. 20350-2000</u></b>

*TBL 1-1-3*

**4. OPERATIONAL IMPACT:** None.

**1. PARAGRAPH NUMBER AND TITLE:** 2-3-7. AIRCRAFT EQUIPMENT SUFFIX

**2. BACKGROUND:** On February 24, 2000, the FAA implemented the use of Reduced Vertical Separation Minima (RVSM) in the Pacific Oceanic area. This airspace is currently designated as Required Navigation Performance-10 (RNP-10) airspace, a reduced lateral separation minima based on navigational performance. The equipment suffix for RVSM is /W, and the equipment suffix for RNP is /R. Our current computer processors are only capable of displaying one equipment suffix. With the introduction of RVSM in the Pacific region, controllers will need to be aware of both /R and /W suffix qualifiers. To indicate to the controller that an aircraft is qualified for both RVSM and RNP, a new equipment suffix identifier, /Q, is being added. It is important to note that airlines will not be filing /Q. This is an identifier internal to the FAA's flight plan data processing systems. When our computer processors receive a flight plan indicating both /R and /W equipment suffixes, the computer will automatically convert this combination to a single, displayable equipment suffix identifier, /Q.

## 3. CHANGE:

**OLD****2-3-7. AIRCRAFT EQUIPMENT SUFFIX****Aircraft Equipment Suffixes**

SUFFIX	AIRCRAFT EQUIPMENT SUFFIXES
Add	Add

TBL 2-3-3

**NEW****2-3-7. AIRCRAFT EQUIPMENT SUFFIX****Aircraft Equipment Suffixes**

SUFFIX	AIRCRAFT EQUIPMENT SUFFIXES
<u>/Q</u>	<u>Required Navigation Performance (RNP) and Reduced Vertical Separation Minima (RVSM) (Indicates approval for application of RNP and RVSM separation standards.) It should be noted that /Q is for automation purposes only and will not be filed by system users. FAA processors will convert the combination of /R+/W to =/Q.</u>

TBL 2-3-3

**4. OPERATIONAL IMPACT:** With the implementation of the suffix identifier /Q, the Microprocessor En Route Automated Radar Tracking System (MEARTS) will be capable of displaying site selected color in the full data block to support the controllers with a visual cue in determining which aircraft are authorized for RVSM/RNP separation standards. The conflict probe function for the Oceanic Display and Planning System (ODAPS) will recognize /Q and probe for any traffic conflicts utilizing these reduced separation standards. All personnel involved with the processing and interpretation of flight plan data must be cognizant of the fact that /Q is an internal FAA equipment identifier and that air carriers will not file a /Q in the equipment suffix portion of their flight plans.

**1. PARAGRAPH NUMBER AND TITLE: 3-9-4. TAKEOFF POSITION HOLD**

**2. BACKGROUND:** An Air Traffic TIPH workgroup convened to review procedures relating to TIPH. The group clarified the existing procedures in the handbook. These changes were incorporated in FAA Notice N7110.210.

## 3. CHANGE:

**OLD****3-9-4. TAKEOFF POSITION HOLD**

a. Authorize an aircraft to taxi into position and hold, except as restricted in subpara e, when takeoff clearance cannot be issued because of traffic. Issue traffic information to any aircraft so authorized. Traffic information may be omitted when the traffic is another aircraft which has landed on or is taking off the same runway and is clearly visible to the holding aircraft. Do not use conditional phrases such as "behind landing traffic" or "after the departing aircraft."

**NEW****3-9-4. TAXI INTO POSITION AND HOLD (TIPH)**

a. The intent of TIPH is to position aircraft for an imminent departure. Authorize an aircraft to taxi into position and hold, except as restricted in subpara e, when takeoff clearance cannot be issued because of traffic. Issue traffic information to any aircraft so authorized. Traffic information may be omitted when the traffic is another aircraft which has landed on or is taking off the same runway and is clearly visible to the holding aircraft. Do not use conditional phrases such as "behind landing traffic" or "after the departing aircraft."

**4. OPERATIONAL IMPACT:** Minimal.

**1. PARAGRAPH NUMBER AND TITLE: 3-10-6. ANTICIPATING SEPARATION**

**2. BACKGROUND:** An Air Traffic TIPH workgroup convened to review procedures relating to TIPH. The group clarified the existing procedures in the handbook. These changes from FAA Notice N7110.210 are being incorporated into Order 7110.65.

**3. CHANGE:****OLD****3-10-6. ANTICIPATING SEPARATION**

Landing clearance to a succeeding aircraft in a landing sequence need not be withheld if you observe the positions of the aircraft and determine that prescribed runway separation will exist when the aircraft cross the landing threshold. Issue traffic information to the succeeding aircraft if not previously reported.

**EXAMPLE-**

"Delta Forty-Two cleared to land. Traffic is U.S. Air MD-Eighty over approach lights."

Add

**REFERENCE-**

FAAO 7110.65, Closed/Unsafe Runway Information,  
Para 3-3-2.

Add

**NEW****3-10-6. ANTICIPATING SEPARATION**

Landing clearance to succeeding aircraft in a landing sequence need not be withheld if you observe the positions of the aircraft and determine that prescribed runway separation will exist when the aircraft cross the landing threshold. Issue traffic information to the succeeding aircraft if not previously reported **and appropriate traffic holding in position or departing prior to their arrival.**

**EXAMPLE-**

"American Two Forty-Five cleared to land, number two following United Boeing Seven-Thirty-Seven two mile final, traffic will depart prior to your arrival."

"American Two Forty-Five cleared to land, number two following United Boeing Seven-Thirty-Seven two mile final, traffic will be an MD 88 holding in position."

No Change

FAAO 7110.65, Landing Clearance, Para 3-10-5b, not required if utilizing the provisions of Para 3-10-6.

**4. OPERATIONAL IMPACT: Minimal.**

**1. PARAGRAPH NUMBER AND TITLE: 4-5-1. VERTICAL SEPARATION MINIMA**

**2. BACKGROUND:** On February 24, 2000, Reduced Vertical Separation Minimum (1,000 ft. vertical) was applied in the Pacific Region. This implementation requires that FAAO 7110.65, paragraph 4-5-1, be amended to reflect the application of RVSM within the Anchorage FIR. Because of Anchorage ARTCC's unique airspace configuration and traffic flow, RVSM will be applied within transition airspace between RVSM approved aircraft.

**3. CHANGE:****OLD****NEW****4-5-1. VERTICAL SEPARATION MINIMA****4-5-1. VERTICAL SEPARATION MINIMA**

Title thru 2.

No Change

3. Apply 1,000 feet between approved aircraft if:

No Change

(a) Operating within airspace and altitude(s) designated for reduced vertical separation minimum (RVSM) or,

No Change

(b) Operating within RVSM transition airspace and designated altitude(s) if en route to/from RVSM designated airspace.

(b) Operating within RVSM transition airspace and designated altitude(s) if:

Add

1. En route to/from RVSM designated airspace; or,

Add

2. Within the Anchorage FIR.

**4. OPERATIONAL IMPACT: None.****1. PARAGRAPH NUMBER AND TITLE: 4-5-2. FLIGHT DIRECTION**

**2. BACKGROUND:** Reduced Vertical Separation Minimum (1,000 ft. vertical) is currently utilized within the North Atlantic Minimum Navigation Performance Specification Airspace and was applied in the Pacific Region in February 2000. According to ICAO Annex 2 (Rules of the Air), Appendix 3, cardinal altitudes may be assigned in areas where RVSM may be used. This FAAO 7110.65 change allows the assignment of any cardinal altitude to aircraft within RVSM or RVSM transition airspace.

**3. CHANGE:****OLD****NEW****4-5-2. FLIGHT DIRECTION****4-5-2. FLIGHT DIRECTION****Altitude Assignment**

<i>Aircraft Operating</i>	<i>On course degrees magnetic</i>	<i>Assign</i>	<i>Examples</i>
Approved aircraft within RVSM or RVSM transition airspace	Any course	Any designated cardinal altitude	FL 330, FL 340, FL 350, FL 360

TBL 4-5-1

**Altitude Assignment**

<i>Aircraft Operating</i>	<i>On course degrees magnetic</i>	<i>Assign</i>	<i>Examples</i>
Aircraft within RVSM or RVSM transition airspace	Any course	Any designated cardinal altitude	FL 330, FL 340, FL 350, FL 360

TBL 4-5-1

**4. OPERATIONAL IMPACT: None.**

**1. PARAGRAPH NUMBER AND TITLE: 8-4-1. APPLICATION**

**2. BACKGROUND:** Currently, a lack of ground-based navigational aids hampers low altitude operations in the Gulf of Mexico, especially those related to the offshore oil industry. The Grid System is a series of GPS waypoints that allows controllers and pilots to more accurately track and report aircraft positional data. This in turn allows for enhancements in safety and efficiency for the users. Because FAA's Flight Standards Organization has determined that, under certain conditions, GPS is the equivalent of a domestic NAVAID signal, it has been determined that a protected airspace/separation standard of 6 miles either side of centerline would be appropriate for aircraft operating on flight paths defined by the use of Grid System waypoints.

**3. CHANGE:****OLD****8-4-1. APPLICATION**

Separate aircraft by assigning different flight paths whose widths or protected airspace do not overlap.

Add

**NOTE-**

Add

*Lateral separation minima is contained in:*  
*Section 7, North Atlantic ICAO Region.*  
*Section 8, Caribbean ICAO Region.*  
*Section 9, Pacific ICAO Region.*  
*Section 10, North American ICAO Region-*  
*Arctic CTA.*

**NEW****8-4-1. APPLICATION**

No Change

**Within that portion of the Gulf of Mexico Low Offshore airspace controlled by Houston ARTCC, use 12 NM between aircraft whose flight paths are defined by published Grid System waypoints.**

**NOTE-**

**1. The Grid System is defined as those waypoints contained within the Gulf of Mexico Low Offshore airspace and published on the IFR Vertical Flight Reference Chart.**

**2. Lateral separation minima is contained in:**  
*Section 7, North Atlantic ICAO Region.*  
*Section 8, Caribbean ICAO Region.*  
*Section 9, Pacific ICAO Region.*  
*Section 10, North American ICAO Region-*  
*Arctic CTA.*

**4. OPERATIONAL IMPACT:** This change will allow controllers to more accurately track the position of aircraft operating in low altitude offshore airspace. This will allow for more efficient use of airspace while enhancing IFR operations in the Gulf.

**1. PARAGRAPH NUMBER AND TITLE: 8-8-3. LONGITUDINAL SEPARATION**

**2. BACKGROUND:** Currently there are several different standards of longitudinal separation being applied within different areas of FAA controlled Oceanic and Offshore airspace that have essentially the same level of CNS capability. Recently ICAO has joined in the effort to standardize these differences. Currently the standard applied to traffic within most areas of the Gulf of Mexico is 15 minutes, as opposed to 10 minutes in most other Offshore and Oceanic areas controlled by FAA. To take full advantage of recent upgrades in CNS, this change will allow the use of 10 minutes longitudinal separation by applying Mach Technique. Mexico has also agreed to utilize a wider range of longitudinal separation, based on Mach Technique. This will result in a significant increase in system capacity.

**3. CHANGE:**

<b>OLD</b>	<b>NEW</b>
<b>8-8-3. LONGITUDINAL SEPARATION</b>	<b>8-8-3. LONGITUDINAL SEPARATION</b>
Title thru c3	No Change
d. Operations between aircraft not covered in subparas b or c ( <i>subsonic flight</i> ):	No Change
1. Operations at or above FL 200.	No Change
(a) <u>15 minutes</u> , between turbojet aircraft, provided the Mach number technique is applied, in accordance with para 8-3-3, Mach Number Technique.	(a) <u>10 minutes</u> , between turbojet aircraft, provided the Mach number technique is applied, in accordance with para 8-3-3, Mach Number Technique.
(b) Between turbojet aircraft, provided the Mach number technique is applied in accordance with para 8-3-3, Mach Number Technique, and <i>only</i> when it is possible to ensure by radar or other approved means that the required time interval exists and will exist at the common point:	(b) Between turbojet aircraft, provided the Mach number technique is applied in accordance with para 8-3-3, Mach Number Technique, and <i>only</i> when it is possible to ensure by radar or other approved means that the required time interval exists and will exist at the common point, <u>and the preceding aircraft is maintaining a greater Mach number than the following aircraft in accordance with the following:</u>
(1) <u>10 minutes when the preceding aircraft is at least Mach 0.03 greater than the following aircraft; and</u>	Delete
(2) <u>5 minutes when the preceding aircraft is at least Mach 0.06 greater than the following aircraft;</u>	Delete
Add	(1) <u>9 minutes, if the preceding aircraft is Mach 0.02 faster than the following aircraft;</u>
Add	(2) <u>8 minutes, if the preceding aircraft is Mach 0.03 faster than the following aircraft;</u>
Add	(3) <u>7 minutes, if the preceding aircraft is Mach 0.04 faster than the following aircraft;</u>
Add	(4) <u>6 minutes, if the preceding aircraft is Mach 0.05 faster than the following aircraft;</u>
Add	(5) <u>5 minutes, if the preceding aircraft is Mach 0.06 faster than the following aircraft.</u>
Add	(c) <u>Between all other turbojet aircraft:</u> <u>15 minutes.</u>

**4. OPERATIONAL IMPACT: None.**



**1. PARAGRAPH NUMBER AND TITLE:** 8-9-9. PROCEDURES FOR WEATHER DEVIATIONS AND OTHER CONTINGENCIES IN OCEANIC CONTROLLED AIRSPACE

**2. BACKGROUND:** Currently, paragraph 8-9-9 specifies contingency altitudes which do not take into account areas where Reduced Vertical Separation Minimum (RVSM), 1,000 ft. vertical, may be applied above flight level 290. RVSM was utilized in the Pacific ICAO region on February 24, 2000. Additionally, paragraph 8-9-9 does not currently state explicitly that controllers are not responsible for providing separation between aircraft during application of the specified weather deviation procedure.

**3. CHANGE:**

**OLD**

**8-9-9. PROCEDURES FOR WEATHER DEVIATIONS AND OTHER CONTINGENCIES IN OCEANIC CONTROLLED AIRSPACE**

Aircraft must request an ATC clearance to deviate. Since aircraft will not fly into known areas of weather, weather deviation requests should take priority over routine requests. If there is conflicting traffic and ATC is unable to establish standard separation, ATC shall:

- a. Advise the pilot that standard separation cannot be applied;
- b. If possible, suggest a course of action; and

**NOTE-**

*ATC may suggest that the pilot climb or descend to a contingency altitude (1,000 feet above or below that assigned if operating above FL 290; 500 feet above or below that assigned if operating at or below FL 290).*

Add

- c. To the extent practical, provide traffic information for all affected aircraft.

**PHRASEOLOGY-**

*STANDARD SEPARATION NOT AVAILABLE, DEVIATE AT PILOT'S DISCRETION; SUGGEST CLIMB (or descent) TO (appropriate altitude); TRAFFIC (position and altitude); REPORT DEVIATION COMPLETE.*

**NEW**

**8-9-9. PROCEDURES FOR WEATHER DEVIATIONS AND OTHER CONTINGENCIES IN OCEANIC CONTROLLED AIRSPACE**

No Change

No Change

No Change

**NOTE-**

*1. ATC may suggest that the pilot climb or descend to a contingency altitude (1,000 feet above or below that assigned if operating in an area of 2,000 feet standard vertical separation; 500 feet above or below that assigned if operating in an area of 1,000 feet standard vertical or composite separation).*

*2. Once the deviating aircraft has begun a maneuver without an ATC clearance in response to weather or other contingency, the controller is not responsible for providing standard separation between the aircraft that is deviating and any other aircraft or airspace. Responsibility for providing standard separation resumes when the deviating aircraft has advised ATC that it has returned to its original or a revised ATC cleared level and track.*

No Change

**PHRASEOLOGY-**

*STANDARD SEPARATION NOT AVAILABLE; SUGGEST CLIMB (or descent) TO (appropriate altitude); TRAFFIC (position and altitude); REPORT DEVIATION COMPLETE.*

**4. OPERATIONAL IMPACT:** None.